Proceedings of the 6th Annual Federal Depository Library Conference

April 14 - 17, 1997

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Washington National Airport Hilton
Arlington, VA

Marian W. MacGilvray
Editor

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Agenda
Spring 1997 Depository Library Council Meeting &
Federal Depository Conference

April 14 - 17, 1997
Washington National Airport Hilton
2399 Jefferson Davis Highway
Arlington, Virginia

Sunday, April 13
Afternoon

4:00-5:00   Orientation to the Depository Library Council and Federal Depository Library
             Conference
             This session is designed to acquaint first time attendees with how Council works and
             to preview Conference activities over the next 3½ days.
             • Sheila McGarr, Library Programs Service (LPS), GPO, Facilitator

6:00   Informal pre-dinner get-together to network by food preference

Monday, April 14
Morning

8:00   Registration and Coffee with Council and GPO Staff

8:30   Welcome & Remarks
             • Jan Fryer, Council Chair
             • Michael F. DiMario, Public Printer

9:00   Keynote Address
             • Eric Peterson, Staff Director, Joint Committee on Printing

9:30   50th Council Meeting Commemoration

9:45   Break

10:15   GPO Update
             • Wayne P. Kelley, Superintendent of Documents
             • Gil Baldwin, Chief, Library Division, Library Programs Service (LPS)
             • Robin Haun-Mohamed, Chief, Depository Administration Branch, LPS
             • Sandy Morton-Schwalb, Electronic Transition Specialist, LPS
             • Thomas A. Downing, Chief, Cataloging Branch, LPS
             • T.C. Evans, Assistant Director, Office of Electronic Information Dissemination
               Services (EIDS)
             • Joyce T. Parsons, Program Analyst, Documents Technical Support Group

12:00   Working Lunch
In order to foster networking, librarians are requested to lunch with other librarians from similar types of institutions.

Afternoon

2:00-5:00   Depository Library Council
Committee Reports and Recommendations for Council Action

2:00-5:00   New Documents Librarians
Informal session to answer questions from mundane to complex about depository issues. For new documents librarians or those who feel "new" to any aspect of depository librarianship. Veteran documents librarians from a variety of backgrounds plus GPO staff will be available.
- Ann Miller, Acting Team Leader, Public Documents and Maps, Duke University, Facilitator
- Cynthia Wolff, Acting Head, Government Publications and Maps, Northwestern University

2:00-5:00   GPO Access (Demonstration): All Databases
- Terri Barnes, Management Analyst, EIDS
- Vicki Ries, Management Analyst, EIDS

2:00-3:00   LPS Tour

2:00-3:00   Patent Public Search Room Tour

2:00-3:00   Center for Legislative Archives Tour

2:00-4:00   STAT-USA/Internet Demonstration

2:00-3:00   Pathway Services (Demonstration)
- Lee Morey, Electronic Transition Staff (ETS), LPS

2:00-3:15   To Be or Not To Be a Depository: Answering the Questions and Envisioning a Brighter Future
- Diann Weatherly, Documents Reference Librarian, University of Alabama at Birmingham
- Barbara Levergood, Electronic Documents Librarian, University of North Carolina, Chapel Hill
- Anna Sylvan, GIS/Government Documents Librarian, St. Charles City-County Library District

3:00-4:00   OCLC's Electronic Archiving Initiatives
- John A. Hearty, Director, Reference Services Business Development Division, OCLC

3:30-5:00   Managing the Depository Database: Some Opportunities With Shared Technology
Part I: GPRD-Institutional and Statewide Benefits of an Internet Accessible Relational Database
- Nan Myers, Government Documents Librarian and Cataloger, Wichita State University

Part II: BDLD and GPO: Creating a Database of Fundamental Depository Information for Web Access by Depository Libraries
- Thomas Tyler, Associate Director for Budget and Technical Planning, University of Denver

4:00-5:00   What is the Carrot? Incentives to be a Partner (Focus Group)
- Duncan Aldrich, ETS, Facilitator

5:30   Dinner with Council and GPO (Informal groups meet in hotel lobby)

Tuesday, April 15

Morning

8:00   Coffee with Council & GPO Staff

8:30   Depository Library Council: Working Session
Self-Study of a Federal Depository Library: Progress Report
- Jan Fryer, Council Chair
- Sheila McGarr, LPS
- Gail Snider, LPS
- Nancy Peluso, Connecticut State Library
- John Phillips, Oklahoma State University

8:30   Depository Library Council: Working Session
1997 Biennial Survey of Depository Libraries
- Anne Watts, Council Vice-Chair
- Sheila McGarr, LPS
- Diane Garner, Head, Documents & Non-Book Formats, Harvard University

10:00   Break

10:30   Depository Library Council - Plenary Session
Permanent Access Planning: Preservation of USDA Digital Publications
- Keith Russell, Deputy Library Director, National Agricultural Library
- Gregory Lawrence, Government Information Librarian, Cornell University
- Evelyn Frangakis, NAL Preservation Officer, National Agricultural Library
- Paul F. Uhlir, Associate Director, Special Projects, Commission on Physical Sciences, Mathematics, & Applications, National Research Council

12:00   Working Lunch
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Afternoon

2:00-5:00   Depository Library Council Working Session
Committee Reports
Other topics TBA

2:00-3:15   Federal Agency Update Session, Part I
Census Bureau
- John Kavaliunas, Assistant Chief, Marketing Services Office, Bureau of the Census
STAT-USA
- Ken Rogers, Director, STAT-USA, Economics and Statistics Administration
Small Business Administration
- John Ward, Writer/Editor, Office of Advocacy

2:00-5:00	GPO Access (Demonstration): All Databases
	• Terri Barnes, Management Analyst, EIDS
	• Vicki Ries, Management Analyst, EIDS
2:00-3:00	LPS Tour
2:00-3:00	Trademark Public Search Room Tour
2:00-3:00	National Digital Library Demonstration
2:00-3:00	Patent Products on CD-ROM (Demonstration)
	• David Morrison, Fellowship Librarian, U.S. Patent and Trademark Office
3:00-4:00	Tell Someone Who Cares: Creating Opportunities to Inform the World (Outside of Libraries) About Government Documents
	• Robert Hinton, Reference/Documents Librarian, Indiana University Purdue University Indianapolis
3:30-5:00	Federal Agency Update Session, Part II
	Federal Information Center Program
	• Warren Snaider, Manager, General Services Administration
	NASA and Information Dissemination on the Doorstep of the New Millennium
	• Dr. Roger Launius, Chief Historian, National Aeronautics and Space Administration
	National Criminal Justice Reference Service
	• Anne Bolin, NCJRS Librarian
4:00-5:00	Pathway Services (Demonstration)
	• Lee Morey, ETS

Wednesday, April 16

Morning

8:00	Coffee with Council & GPO Staff
8:30-12:00	Depository Library Council Working Session
	Draft Recommendations and Action Items
8:30-10:00	Regional Program
	Innovative Uses of the WWW
	• Ann Marie Sanders, Depository Librarian, Library of Michigan
	• Thomas Tyler, Associate Director for Budget and Technical Planning, University of Denver
	• Saundra Williams, Head, Government Publications, University of Memphis
8:30-9:45	Bibliographic Access to Electronic Resources: National Standards
	• Jean Hirons, Acting CONSER Coordinator, Library of Congress
	• Thomas Downing, Chief, Cataloging Branch, LPS
	• Wilfred Danielson, Cataloger, LPS
	• Eileen Seremeth, Cataloger, LPS
	• Steven Uthoff, Administrative Librarian, LPS
10:00	Break

10:00-12:00   Federal Publishers Committee
Moving from Print to Electronic Dissemination: Why, When and How to Do It
- Stan Prochaska, Public Affairs Officer, U.S. Department of Agriculture
- Richard L. Sillcox, Oceanographer, National Ocean Service
- Gary Lauffer, Chief, Publications Services Branch, Bureau of the Census
- Tom Hester, Technical Editor, Bureau of Justice Statistics
- Martha Sneed, Manager, Patent and Trademark Depository Library Program, U.S. Patent and Trademark Office

10:00-11:00   LPS Tour

10:00-11:00   Patent Public Search Room Tour

10:00-11:00   National Digital Library Demonstration

10:30-12:00   Regional Program
Bibliographic Control in an Electronic FDLP: Problems, Practices, and Policies
- Cynthia Wolff, Acting Head, Government Publications and Maps, Northwestern University
- Carol Bednar, Government Documents Coordinator, California State University, Fullerton
- Barbara Selby, Government Documents Librarian, University of Virginia
- Arlene Weible, Periodicals and Government Documents Librarian, Willamette University

10:30-12:00   Digitizing Maps for Preservation
- Elizabeth Mangan, Head, Technical Services Section, Geography & Map Division, Library of Congress

Alexandria Digital Library: Digitizing Spatial Data for Access and Preservation
- Mary Larsgaard, Assistant Head, Map and Imagery Laboratory, University of California, Santa Barbara

Digital Preservation of Cartographic Materials: Historical Maps and Current Government Information
- David Cobb, Head, Harvard Map Collection, Harvard University

12:00   Working Lunch
In order to foster networking, librarians are requested to lunch with other librarians from the same geographic region

Afternoon

2:00-5:00   Depository Library Council Working Session

2:00-3:00   Designing Web Pages for Depositories
- Jennifer McMullen, Government Publications Associate, College of Wooster
- Rosalind Tedford, Government Documents Assistant, Wake Forest University

2:00-3:00	Regional Program Building Library-Agency Partnerships • Stuart Basefsky, Information Specialist, Cornell University • Gregory Lawrence, Government Information Librarian, Cornell University • James Horsfield, Chief, Research Support and Training Branch, Economic Research Service, U.S. Department of Agriculture
2:00-5:00	GPO Access (Demonstration): All Databases • Terri Barnes, Management Analyst, EIDS • Vicki Ries, Management Analyst, EIDS
2:00-3:00	LPS Tour
2:00-3:00	Trademark Public Search Room Tour
2:00-3:00	Center for Legislative Archives Tour
2:00-3:00	Pathway Services (Demonstration) • Lee Morey, ETS
3:00-5:00	Regional Service Strategies: Planning Session • Daniel Barkley, Government Information Librarian, University of New Mexico • Ridley Kessler, Government Documents Librarian, University of North Carolina at Chapel Hill
3:15-5:00	Preservation Is Common Sense: Practical Tips for Government Document Collections • Julie Arnott, Manager, Preservation Services, SOLINET • Thomas Clareson, AMIGOS Preservation Service Manager

Thursday, April 17

Morning

8:00	Coffee with Council & GPO Staff
8:30	Preservation Planning for Permanent Public Access • Irene Schubert, Acting Chief, Preservation Reformatting Division, Library of Congress • Dr. Kenneth Thibodeau, Director, Center for Electronic Records, National Archives and Records Administration
9:15	Permanent Access Partners • Colleen Hope, Director, Office of Public Communication, U.S. Department of State • John Shuler, Head, Documents Department, University of Illinois at Chicago • Duncan Aldrich, ETS
10:00	Break
10:30	Depository Library Council - Plenary Session Report of Draft Recommendations and Action Items (including audience response and comments)
12:00	Adjourn

To Be or Not To Be a Depository: Answering the Questions and Envisioning a Brighter Future

Diann Weatherly
University of Alabama at Birmingham
Birmingham, AL

Good afternoon and welcome to this afternoon's program, "To Be or Not to Be a Depository: Answering the Questions and Envisioning a Brighter Future." My name is Diann Weatherly. I am the Documents Reference Librarian at the University of Alabama at Birmingham. I will be presenting a non-depository library point of view. Our next speaker will be Anna Sylvan, GIS/Government Documents Librarian from the St. Charles City-County Library District in Missouri. Anna will bring to us a perspective from a public library as well as the smaller library point of view. Finally, Barbara Levergood, Electronic Documents Librarian from the University of North Carolina, Chapel Hill, will look at our topic from the Regional Library perspective.

I'm sure there's not just a few of you who wonder just exactly what is our topic! In some ways, this was intentional. What I asked of today's panel, including myself, was to look at the past and current situation of the Federal Depository Library Program (FDLP), to consider and answer some of the questions that evolved from this environment, and then to envision a brighter future. What I asked of us was, essentially, to be creative, to imagine what kind of FDLP of the future would solve some of the problems we face in our libraries. Someone asked me if this program would address dropping depository library status. In a round-about way, the answer is yes. However, what I have asked of this panel is to try to take a positive view of the future. I truly believe that unless you can imagine a better situation, it's very difficult to achieve it. Nevertheless, I am a librarian for a Government documents

collection in a non-depository library, and I hope to provide some insight in that direction.

Now that you know who we are, please allow us to know a bit about you. If you would, please raise your hand in answer to a few questions. How many of you are documents librarians from public libraries? Academic libraries? What about law libraries or other special libraries? How many of you work with the Federal Government, including the GPO, in some capacity? The next question involves how long you have working in the area of Government documents. How many have worked with documents less than five years? Five to ten years? Eleven to fifteen years? Fifteen to twenty years? Over twenty years? The last question I have for you is phrased in a manner I don't usually like to use, but please bear with me since I think it is important for us to know: how many of you do not have the World Wide Web available to the public yet? Of those who raised their hands to that question, how many *do* have World Wide Web access available to yourself or your staff? Thank you. I prefer not to ask questions in the negative, but I think it's important for us as a panel and for you as an audience to maintain our perspective about where the documents community stands as far as technological progress is concerned.

In order for you to understand my point of view as a non-depository documents librarian, you have to understand a bit about my situation at the University of Alabama at Birmingham, or UAB. UAB was established as a separate university from the University of Alabama in 1969. The University of Alabama,

yes, is the university with "the" football team, "Roll-Tide," etc. It's located in Tuscaloosa, a 45-minute drive from Birmingham (and it happens to be the location of a regional depository library). UAB started from a medical school, for which it is still best known. The enrollment has grown from 5,381 students to over 16,000. The total employee count is over 15,000 - Birmingham's largest employer and the fourth largest employer in the state. The reason employee count almost matches our enrollment count is because of the inclusion of the university hospital staff and all the medical research staff in that total. The University estimates that UAB has a 1.6 billion dollar economic impact in the area.

Mervyn H. Sterne Library is the general library for the campus. There is also a separate medical library at UAB, as you might expect. In 1969, Sterne Library held 10,000 volumes and was housed in two classrooms. In 1996, we held over 1 million volumes and 2,500 periodicals, and we have a three-floor building with seating for over a thousand users. The library online system is NOTIS and includes 17 online periodical indexes shared within a state consortium.

Why would such an important research university not have a depository collection? Well, we tried. In 1970, the library director (our first; we've only had two directors), sought depository status, but the effort failed. There were already as many depositories in the district as the law allowed. Even a senatorial effort failed. Fortunately, as UAB was quickly coming into existence, so also was a company called Congressional Information Service (CIS). The library has subscribed to the indexes and complete microfiche collections of ASI and CIS since the beginning. The library holds an estimated 80% depository equivalent documents collection. If you would like to know more about our library and some of the figures cited below, the details are provided in an article I completed last year: "A U.S. Government Publications Collection in a Non-Depository Research Library: A Case Study," in the *Journal of Government Information*, vol. 28, no. 4, pp. 471-489, 1996.

When I first came to work at UAB in 1985, I held secret hopes to eventually gain depository status for our library. I talked with other Government documents librarians, attended meetings and workshops, and eventually signed on to GOVDOC-L. During my eleven-plus years, I began to see some advantages of my non-depository situation. With my (primarily) ASI and CIS microfiche collections, there were no shipping lists, claims lists, superseded lists, or discard lists. Microfiche, compared to paper documents, do not need to be barcoded, labeled, shelflisted, or security stripped. I did a five-year comparison (for the years 1989-93) for my best estimate of an 80% paper collection. To shelve 1,520 feet of paper would have cost our library $7,478. Instead, for that five-year period, we spent $2,790 for one microfiche cabinet (which, in reality, holds more than a five-year period of microfiche). I talked to several of the larger depository libraries in Alabama about the number of titles they sent to the bindery during this five-year period. As I estimated the cost for binding for this same size collection, the cost could have been anywhere from $6,653 to $31,430 (depending on what a library chose to keep in paper vs. microfiche or discarding, etc.). Sterne Library does purchase some documents in paper copy, but the cost for binding was less than $1,000 (on such titles as Survey of Current Business, some of the Alabama census volumes, etc.).

I studied surveys, the Federal Depository Library Manual, articles, and GOVDOC-L messages to come up with a composite staffing scenario for an 80% depository library: 1 librarian, 1 paraprofessional, and about 80 hours of student help. At Sterne Library, the documents staff involves one librarian and 2 hours of student help per week (which, at the time of the article, was 19 hours per week). These two hours are still adequate for filing and refiling of ASI and CIS microfiche.

The quality of service with a primarily microfiche collection depends a great deal on good indexing and on good equipment. The reference interview process almost always involves a follow-through to instruction on

how to use the microfiche reader/printers. I add here that "browsing" and "serendipity" are not lost, but they are different. My users and I have run across interesting titles through the ASI and CIS indexes, as well as surrounding fiche titles when pulling a microfiche.

The disadvantages of the UAB non-depository collection involve weaknesses in the areas of popular public information (pamphlets usually), monographs, patents, technical documents, and maps. Of course, several of these areas are not a part of all depository collections, either, but you still receive some publications in each category which are not easy for me to obtain. I see the absence of Government CD-ROMs in our collections as both a disadvantage and an advantage, and I bet most of you know what I'm talking about right away. I might want some of the census CD-ROMs, but don't care a thing about supporting all the CD's none of you have figured out how to use yet! The final disadvantage is that microfiche, even with good indexing and equipment, is still microfiche.

You're all wondering about now what this has to do with you, and definitely what it has to do with a "brighter future." Well, I think that my work situation has some parallels to the electronic environment. To a certain extent, a "brighter future" already has some reality to me as a non-depository documents librarian because of greater access.

Like microfiche, Internet-based electronic documents need no shipping lists, claims lists, superseded lists, or discard lists. Superseded documents are updated dynamically, and there is no need for someone to list, pack up, and ship off discarded documents. Like microfiche, electronic documents do not need to be barcoded, labeled, shelflisted, or security stripped. There's no need for more shelf space, microfiche cabinets, or binding of documents.

Probably the most important point is that the collection reaches far beyond our library walls and is more timely. For many of you in the depository community, you think about what you're losing. For those outside the "automatic receipt" club, think about what we're gaining! One of my most frequent requests for information is from the Federal Register, both for regulations and for grants announcements. Whereas the information used to come in about a week after publication date, and on microfiche, now I lead a user to the information, perhaps over the phone, on the day of publication. Like microfiche, the information is more hidden, but, in my "brighter future," the indexing is good, whether from the GPO or a private vendor, like CIS. Also, "browsing" and "serendipity" are not lost, but, again, are different (and many Web sites include "browsing" capability as a part of their site).

Once computer equipment is in place and staff is trained, librarian and library staff attitudes will be more positive in helping users. As with microfiche, the reference interview involves instruction with the equipment; the instruction merges with the answer to the question.

I'd like to add here that I believe libraries are going through a computer purchase "hump" right now and, although everyone talks about the 18-month longevity of computer equipment, not *all* computers will need to be replaced or upgraded with every update in technology. Another aspect I envision for a brighter future is more "coherent" service. In my current NOTIS library system environment, our OPAC and 17 online periodical indexes are searched very nearly the same (through the wonder of Z39.50 standards). I don't have to teach a user one methodology to search the Reader's Guide and then another to search PAIS. I have enjoyed a streamlined simplicity that I think I'm about to lose because of the World Wide Web, but I would hope for some standardization in my "brighter future," at least for Government Web sites.

I have three final thoughts for you. I would like to emphasize that documents departments and librarians are not alone. The current changes are library-side changes, not documents changes. Since all libraries and

departments within libraries are facing electronic information issues, partnering, or at least conversing, with those outside the Government documents department is very important. Second, and I say this from outside the depository program, the FDLP is still needed because the librarians are trained for access and are an important advocate for non-privatization of Government publications. This issue is important for all libraries, indeed, all citizens. I would think that non-privatization would even be important for private publishers, in order for them to have access to Government information to add value to and resell. Finally, I envision a new type of depository library: an Internet-only, electronic affiliate. It would receive no paper, no fiche, no CD-ROMs; but the librarians would partner to provide access, the right computer equipment, and new depository librarians, who would be added to those trained for access and to the voices of the aforementioned advocates.

To Be or Not To Be a Depository: Answering the Questions and Envisioning a Brighter Future From the Vantage Point of a Regional Federal Depository Library

Barbara Levergood
University of North Carolina, Chapel Hill
Chapel Hill, NC

I. Introduction

We are here today to talk about why we are Federal depository libraries and what we see as interesting possibilities in our futures as depositories. I will do so from the vantage point of a Regional in the Federal Depository Library Program, one that serves the University of North Carolina at Chapel Hill, a large research institution, and that also serves the selective libraries in and the people of North Carolina.

II. Why We Want to Remain a Depository

We have been a depository since 1884 and a Regional since 1962. We want to remain a Regional library in the program. To this end, we have worked hard to keep our administrators informed about the transition to a more electronic program and about arguments in favor of us retaining our status and arguments for the retention of the program itself. This is what we tell them.

First, we are strong advocates of effective public service in support of the public's right to access Federal information. Federal depository libraries being critical links in the ability of citizens to access that information, we must also be a depository.

Second, we want to retain our status because our tangible collection is needed in support of the mission of the university; it is large, heavily

used, and the property of the Federal Government. We would lose the right to house it if we gave up depository status.

The argument that we always hear is that now that so much Federal information is available to anyone via the Internet, why do we need the program? Why do we need librarians? Indeed, why do we need libraries?

And we are now familiar with the counter arguments involving public service. Librarians in the program specialize in Federal information and thus will be able to provide better public service for that information, than librarians who lack the specialist's knowledge, by and large. The services provided by my colleague at the University of Alabama at Birmingham, I am sure, are an exception.

Fourth, librarians in a depository library are best equipped for recognizing, acquiring, and providing public services for fugitive documents.

Our final argument for being a Federal depository library is one that I'd like to discuss in some detail. Depository libraries have received limited depository access to some Internet services that are otherwise for-fee, for instance, STAT-USA, CenStats, and in its infancy, even GPO Access. It is critical that other such services fall under the depository umbrella since they constitute one clear

advantage that depositories have over non-depositories in the world of the Internet.

It is also critical that depositories be granted more than one single-user password to such services, or better, that such restrictions are eliminated altogether. In our own situation, we have purchased a campus site license for STAT-USA in order to provide wider access. How many more such purchases for access to Government information otherwise available on a very limited basis through the program can we make before our administration decides that depository status provides no real advantage for access to Internet services? That is, some administrators are beginning to ask what the advantage is in being a depository if we end up paying for wider access anyway in the end.

The same argument can be made for CD-ROM or tape purchases that we have made because the depository product was for some reason unusable or inefficient in our library setting. For instance, we have purchased spatial data from Wessex in ArcView format to supplement the TIGER/Line files; census data from Wessex to supplement the census discs; not to mention bibliographic data from Marcive to supplement our beloved MoCat.

License agreements are another example of a restriction on public access that has already come back to haunt us. Some products such as the NTDB now cannot be networked without further cost to a depository. Many products come with access software that is licensed; libraries may not redistribute the software along with the data without paying a fee to the software vendor.

Of course, this is but a small part of the cost shifting that is taking place during this transition to a more electronic program. Depositories have always made significant contributions of resources to remain in the program. However, Government information that is accessible without restriction and that is usable is good for the program and the public is the ultimate beneficiary. Make this the first item on my wish list.

III. Depository Services in the Future

I would like to talk about what the depository system might look like in the future in the area of services. I'll begin with levels of service to the public, and then turn to Regional services for selectives.

Levels of Service to the Public

Advances in technology, increasingly sophisticated user capabilities, rising user expectations, and the migration of massive amounts of important Government information to electronic format are providing new opportunities and a mounting imperative to provide effective public service. These opportunities are of two types. On the one hand, we must now be prepared to provide new services that are at the same level of service that we have been providing in the past. For example, in addition to providing photocopying capability, we now also provide downloading and printing. These services are typically very basic ones that we would hope that every library could provide.

GPO and the depository community are working on public service guidelines for the program. The guidelines can provide a uniform minimum level of service that a user can expect in a depository library that cannot be guaranteed outside of the program. This could be very good for the program, if only to provide a way for us to define our public service role as we enter an era in which we must address how we can provide effective public access to information that we may not even own.

On the other hand, we also have the opportunity to provide new services at higher levels of service than we have in the past. For example, we used to be able to provide a volume of the census to a user to pick a number out of a table. To access the same data in electronic format, we must have a more sophisticated understanding of census geography and the way that the census was conducted. Users may need to be shown how to create their own tables. They need advice

on what format they should save their data in for import into their favorite application. Furthermore, we are constantly asked questions that only a statistician can answer. In today's world, many libraries cannot provide an answer to these more complex questions without referral.

I'd like to see the Regional libraries, especially those in large research institutions, move towards a future in which statistical questions can be asked and answered in the library or on campus by a range of well-integrated library staff and affiliated staff, from technical assistants to librarians to statisticians. I am not talking about a simple referral to another unit on campus, but rather about a group of staff with expertise in different areas working with a user to make sure the information needs are met. A similar scenario might be appropriate for the TIGER/Line files and for Congressional materials. Note that data librarians and GIS librarians may already be offering these higher levels of service. Other products and services might benefit from higher levels of different services.

Why is it important to move towards higher levels of service for electronic information, whatever those services might be? First, the census example illustrates that it is not just the format of the information that is changing. Rather, the point is that the way in which the information is accessed and used is changing dramatically in the migration to electronic format. Naive users are effectively denied access to much information if all we can provide is the lowest level of service: assistance in getting in and printing out or downloading. To provide effective access, higher levels of service for some information is now essential.

The second reason that offering higher levels of service is critical is that we are arguing for the need for the program on the basis of the expertise that we can provide. We are justifiably proud if we can provide even the basic level of service for a large percentage of the depository products and services. However, an individual user will not be impressed by this breadth of expertise because it is usually invisible to him/her. Furthermore, as the computer literacy of the users themselves increases, they do not need help getting in and downloading. Rather, we are finding that users are looking to librarians for more and more depth of expertise, i.e., higher levels of service. For example, we have users who were weaned on CD-ROM products such as the census or REIS, found out about and used the wonderful data extraction sites on the Internet, and now come back to use the CD-ROM products instead when they want to ask questions of library staff, taking advantage of the higher level of service that a human can offer. The more difficult challenge, of course, is to offer services, especially higher levels of service, to remote users.

Finally, many Regionals have products sitting in our CD-ROM cabinets that go unused in-house because we cannot support them at the level of service that the product demands. Furthermore, many potential users of the CD-ROMs are effectively denied access because the unsupported CD-ROMs do not circulate; because the user is ineligible to borrow from the library; or because the user lacks the equipment, software, or expertise needed to use the product at home. Increasing the level of service for the important Federal products and services would be one way to broaden access to them.

We have already seen that the electronic services that we could provide are often far greater in number and far more sophisticated than those we needed to provide for print or microfiche. We all know the problems. We are limited by staff, staff expertise, money, time, space, equipment, policy, and institutional commitment. It is already a constant challenge to properly evaluate what services we will provide and at what level of service.

But, Diann says that we are allowed to dream today without worrying about the consequent problems. So my dream is that we will have guidelines that specify a minimum level of service for depository products and services.

Then we will begin to discuss what the public service role of the depository might be at higher levels of service.

Regional Services for the Selectives

Turning now to Regional services for the selectives, let me say up front that, in my view, it is important that the concept of the Regional be retained, even though the details may not yet be known about the exact role of the Regional. It is now and will remain important in the future to have a geographically dispersed group of libraries that can be relied on to have a more comprehensive tangible collection and more experience and expertise with Government information in all formats. It is no less important to have a Regional librarian who is a strong leader for the depository community in the region.

Libraries are still working out our own problems in the transition to electronic information and we are now beginning to discuss unmet needs and whether and how the Regionals can help to serve those needs.

The services provided by a Regional to the selectives in the region might be categorized into levels of service in much the same way that a library's public services are. I'd like to focus on a couple of the many types of higher levels of service that a Regional might offer to the selectives.

It would be a mistake to assume that the Regionals would not have much of a role with respect to information on the Internet. Rather, we expect that Regionals will play a leadership role in helping to provide wider access to for-fee Government services such as STAT-USA, CenStats, World News Connection, or private services such as Legi-Slate or Washington Alert. The issues include who would pay for the wider access: the Regional, the Regional in cooperation with the selectives, or even the program; and how wide the access could be.

Regionals might also assist selectives by providing copies of unlicensed CD-ROMs or

by providing files from them. This is something that we have planned for in our library. We have an FTP site that can be used for storage of large amounts of data. We also have an as-yet-undebugged CD-R, a CD-ROM recordable device that will allow us to make copies of CD-ROMs or of large files from CD-ROMs or the Internet. These copies can be loaned to selectives or to users.

There will be limits on what the Regional can do, however. A couple of simple examples make the point. On the collections side, as more and more Federal Government information leaves the program, Regionals hope to purchase the information or access to it. But the Regional will have to make selection decisions for these materials and thus we will not have everything. On the services side, it is our understanding that although Regionals should have all tangible materials in our collections, under program guidelines we need not be responsible for supporting every electronic product or service. Rather, we are asked to have policies on levels of service that we will provide for given products and services.

Planning for the Future

It was Diann's idea for this panel that we envision what we might achieve as depository libraries in the future, unencumbered by naysayers. I am not a visionary. But I do try to keep my finger on the pulse of time marching forward for planning purposes. Attending the meetings of the Depository Library Council is one of the very best ways to do that.

Another way, for our library, is to watch the Census Bureau. There are many reasons for this. The Bureau is planning right now for Census 2000. The census is the single most heavily used material in our section. The problems in providing access to the census in all of its formats are diverse and challenging enough that we feel that if we can support the Census Bureau's products, we have the capability to support almost any Government information product. Based on what the Census Bureau has told us so far, we expect far

fewer print products for Census 2000, with
more information available on CD-ROM or the
Internet. Maps may migrate almost completely
to digital format. Thus, we are looking at
having the equipment and software in place
for the arrival of the Census 2000 products,
including that needed to print out census
maps. The effort that we have already made to
provide a high level of support for the 1990
census and to support the TIGER/Line files will
pay off for the next one, and the equipment
that we need for Census 2000 will be used for
other Government information products as
well. The very process of trying to plan for the
Census 2000 is great practice for thinking into
the future of the Federal Depository Library
Program.

The Federal Documents Depository #0337,
A Success Story: Lessons We Learned

Anna A. Sylvan
St. Charles City-County Library District
O'Fallon, MO

Good afternoon. Thank you for inviting me again this year.

Among the many questions that depository libraries are facing today, the issue of connectivity is one of the most important and still waiting to be resolved. Connectivity simply means access. In the age of electronic document delivery, and with the growing number of documents available via the Internet, it is inconceivable for a depository to function without the connection.

I touched on that issue last year, and those of you who attended the conference and my presentation might remember the alarming statistics. According to a study done by ALA of 9,000 public libraries, only one in five had Internet access. With the increased number of community networks, however (according to the National Civic Review, spring 1996 issue, there are currently over 300 community networks operating nationally) the odds for the public library to be connected improved significantly.

This is a follow-up to my last year's presentation and an assessment of our depository performance, lessons we have learned, and conclusions that may be helpful to other depositories.

Another Depository? Are We Needed?

The St. Charles City-County Library District, the Middendorf-Kredell Library Branch, is one of four depositories serving the 9th U.S. Congressional District (CD). The closest 9th CD depository, the Westminster College Library, in Fulton, Missouri, is 85 miles west of us. Our Regional is 100 miles away. On day to day operations, when a document is needed and is not found in our collection, we rely heavily on our two neighbors serving the 1st CD: the University of Missouri-St. Louis, 25 miles away, and the St. Louis Public Library, about 45 miles from us.

Who Are We?

The #0337 Federal depository was established in 1990. We are a small depository collecting below 20%. The staff consists only of myself and my assistant, a part-time (20 hrs/wk) para-professional whose duties are limited to the technical part of the operation.

The library has eight branches, all of which have a minimum of 12 public access PCs. By definition, we are a large library with over 600,000 volumes and still growing.

Who Are Our Clients?

Although officially designated for the 9th CD with a population of over 350,000 residents, in actuality, our depository serves the entire St. Charles County, which is divided between the 2nd CD and the 9th CD. As of 1994, the county population was estimated to be over 240,000. (The Bureau of the Census estimate puts the St. Charles County population by 2005 in the neighborhood of over 309,000.) The total number of residents that come to us seeking Federal information is estimated to be over 500,000.

St. Charles County - Demographics

St. Charles County is a dynamic community growing at the rate of over 18% per year. This is a community of young, educated professionals with two-income families.

Here is a snapshot of the demographics:

    32% are under 20
    36% are between 20-39
    96.6% are white
    87.2% are married with children
    38% with income of $35,000-$74,999
    Median family income: $48,040
    Labor force - women: 44.7%
    Over 50% with college education

The library is one of the original sponsors of the community information system: WIN, or the Westplex Information Network. In early January 1995, LYNX, the textual browser, was used in the basic development stage of the network. In April 1995, Netscape was installed in most of the branches. As of now, all branches provide access to the World Wide Web.

Among other benefits, WIN offers free access to the Internet to all county residents, and for a nominal fee of $6.00 per month, a SLIP connection. At the present time there are approximately 11,000 passwords issued by WIN. Most of them are SLIP accounts.

Consequently, our clients are computer literate, hungry for information, and eager and willing to learn. The number of requests for Federal information is very high. My unofficial survey revealed that one out of every 10 reference questions was document related. Out of these, approximately 65% were answered with the help of the online sources.

Even those rough statistics confirm what is happening in the world at large. The changes in document delivery are overwhelming and encompassing all aspects of society.

For the first time in history, the local library is no longer the only place where information

can be found. A library has to compete for clients with other information providers. To survive, libraries have to justify their existence. They have to prove that the money spent on them is money spent wisely. Libraries have to become proactive in their activities... they have to promote and market their services and materials.

This is a new environment for all of us. Although our mission remains the same, our role has changed. We still collect and disseminate information. We provide answers to questions. Now, we must teach, educate ourselves, market and promote, network with others, provide the access and teach how to use the access. We must proactively seek potential clients. We must justify our existence by making sure that our services are viewed as indispensable. As documents librarians we have to actively engage in promoting and marketing our services.

I never thought that as a Government documents librarian I would have to learn the skills of a successful businessman. I realized, however, that this is exactly who I am: a businesswoman who seeks partners, develops networks, makes sure her services are always dependable, develops a clientele who relies on her information, gets referrals from people who have established a solid business relationship with her.

I publish home pages, I select the sources, I teach classes for the general public and for other librarians, promote new products, collaborate with various institutions, organizations, colleges or other depositories, and local agencies. I cannot sit and wait for the patrons to come to me. **I have to seek my audience!**

The proactive behavior is particularly important in the case of Federal documents. Historically, the documents have been misunderstood and underused and in need of marketing and promoting.

I consider myself very fortunate to work for a visionary director who sought the Internet

connection before building home pages became fashionable. He was not afraid to take risks. He is supportive of his staff and encourages initiative and creativity. In my activities as Government documents librarian, he gives me a complete "carte blanche."

Here in a nutshell is what we do in our depository:

Access to Documents

Cataloging/Shelving
Equipment
Providing access - Home Pages
Bibliographic Instructions and training: staff
   and the public)
Cooperation with the Regional and other
   depositories
Networking within the community
Promotion/Marketing

Cataloging

The project to catalog the entire document collection should be completed by the end of 1997. At the present time we are simultaneously cataloging retrospective and current documents. Many of you who responded to my question on GOVDOC-L (to catalog or not to catalog) indicated that the use of documents will increase visibly once they are available on the library catalog. I can already see the difference in items that are cataloged.

The collection is shelved separately from other reference materials. However, both the reference and circulating documents are shelved together. Most of our items circulate. The non-circulating, reference materials (laws, regulations, current statistical sources) are marked with a symbol "R" on the spine.

Prominent signage is used throughout the library to direct patrons to the documents. Signage for the document shelves display the SuDocs numbers, the names of agencies, and names of bureaus or offices operating within an agency.

Selective titles of frequently used serials are shelved on prominently situated shelves visible from many areas of the library.

Equipment

How much is enough? The guidelines for minimum technical requirements are changing constantly and what is appropriate today may be outdated tomorrow. Driven by the information technology industry and the World Wide Web's ever changing environment, the technical requirements set by the GPO are only reflections of what is happening "out there."

The laptop that was ordered just a year ago for me, specifically for GIS applications, is already outdated. Fortunately, I was able to request a new one with an active matrix screen with 48 Kb of RAM. How long will it last? I also have a color printer designated for GIS services and I already worry that the memory may not be enough.

As I mentioned, all of the branches provide access to the World Wide Web. Printing commands from the LAN stations are routed to several laser printers situated near the reference desk.

The depository CD-ROM products are available on a PC equipped with two 12-slot towers. Printing from this station is done independently from other LANs, to a single laser printer.

The ten "most popular" CDs are installed permanently; other slots are used for "swapping." The list of the CD-ROM collection is available both at the station, and at reference desks of all branches. (The information includes the title, brief annotation, information about specific software, etc.).

Access

In order to facilitate access to electronically disseminated documents, I currently publish two home pages: GIS and Government Documents:

http://www.win.org/library/matls/govdocs/
main.htm

http://www.win.org/services/gis/gishp.htm

Although I provide links to comprehensive sites, most of my links lead directly to full text documents or searchable documents. In order to do so, I cut most of the intermediary links and place a site directly on top of my home page. This has proven to be very useful in the public library environment where the level of search capabilities is very uneven and it is not uncommon to encounter patrons labeled as "mouse-impaired!" My documents home page is directed toward the general public to access Government information either from the library's PC or, even more importantly, from a remote place.

Statistics show that my home pages are used heavily both in the library by the reference staff and patrons that come in, and by remote users.

I am solely responsible for the contents, presentation and technical aspects (I also upload the pages onto the server which gives me control over timeliness of the information and streamlining of the entire operation).

Just recently I have created a documents home page designed specifically for children. I hope this document is balanced, properly offering solid information and a little bit of fun!

http://www.win.org/library/matls/govdocs/
kids.htm

Bibliographic Instruction/Training

Electronic access doesn't necessarily mean that the information we are seeking is readily available. This is a common misconception among many. I remember many times my frustration while searching GPO Access. Like many others it is a powerful, comprehensive site, but remains difficult to navigate not only for the neophyte but also the expert.

The Documents Department at the St. Charles City-County Library District is participating in a

very aggressive year-round program of bibliographic instruction for the general public. Realizing how difficult it is to master the Internet, the district has decided to offer regular search classes, on different levels, for people from our county.

Twice a month, with a limited seating of 12, lasting an hour and a half, a hands-on class, How To Access Government Documents, has been so successful that a new format is under consideration.

Similar training, although on a smaller scale and in an informal manner, is offered to the library staff at regular intervals.

Thanks to Friends of the Library, who donated over $15,000 to the district, we were able to buy several high quality LCD panels that were urgently needed for BI/training programs offered by the district.

Cooperation with the Regional and Other Libraries

Changes are inevitable. Changes are unsettling. Changes, however, can be viewed as opportunities for growth, for re-evaluation, for trying new approaches.

During those times of uncertainties, communication and cooperation with other institutions are vital.

Instead of "reinventing the wheel" each time we encounter a new situation, we should be able to plug into existing resources. This is the mechanism that works so well for all of us via GOVDOC-L.

Similarly, the Regional library should be the "safety net" for those with minimal or no Internet connection.

I would like to see the Regional:

As a clearinghouse for depositories that do not have Internet access, or very limited access (i.e., text-based browser only)

As a think tank, coordinator and initiator of training for documents librarians (i.e., training on GPO Access and other databases where proficiency is needed)

Continue to be a support and resource center for other depositories.

Networking Within the Community

This goes to the heart of the issue of marketing, promoting and proactive activities of the depository.

I attend numerous meetings of local Chambers of Commerce, education groups, business groups, and others. I want them to know not only who I am, but what I can do for them as a Government documents librarian. I use specific examples using documents that were helpful in similar circumstances.

Promoting/Marketing

I try to stay visible!

News from the documents department that affects the district, the reference departments, the users, is transmitted by me via:

• Reftalk, our internal distribution list

• Local newspapers

• Handouts (published by our PR people)

• Signage within our library

• The Internet

• Word of mouth

I will use any form and opportunity to talk about the documents, our collection, the access we provide, and the training that we offer.

I maintain a close relationship with local colleges. The University of Missouri-St. Louis and the Social Sciences Department of the University of Missouri at Columbia are my major partners in document delivery.

Success ... How Was It Possible?

• Visionary leadership of your parent institution. The depository does not function in a vacuum. We are an integral part of a bigger organization and our performance reflects its activities.

• Seeking partnership with other organizations (i.e., community networks):

> Identify funding
> Identify the partners
> Identify common organizational goals
> Recognize the various organization cultures
> Be aware of what is happening in your region and your state

• Leadership that embraces and seeks technology (technology is viewed as an opportunity and challenge, not a hindrance).

• Financial commitment to technology. Your institution has to provide financial support for programs that require technical improvement.

• Community involvement is essential. Free access to the Internet creates a culture that allows people to experience new ways of document delivery. New possibilities go hand in hand with hunger for information and eagerness to learn.

• Community needs have to be identified and addressed on a daily basis. The collection and access to documents that the depository provides is only valuable when it is used in addressing the needs.

• Match the needs by offering services and creating opportunities for learning.

• Promote the depository activities within your institution and your community.

If you are interested in information on community networks, I have created an HTML document that you can access directly:

> http://www.win.org/library/matls/govdocs/
> cnet.htm

or, from my home page:

> http://www.win.org/librarymatls//govdocs/
> main.htm/Depository #0337/Information
> on Community Networks

I would like to thank my colleague from the St. Charles City-County Library District, Jim Brown, for sharing with me his thoughts on developing a community network. He was involved in developing WIN from its conception.

OCLC Electronic Archiving

John A. Hearty
OCLC
Columbus, OH

OCLC Electronic Archiving

- Goals of Electronic Archiving (EA)
- Obstacles to Implementation of EA
- Dimensions of Ideal EA System
- OCLC Strategies and Strengths
- Electronic Archiving Pilot
- EA System Functionality
- Pilot Business Model
- Content Providers

Goals of Electronic Archiving

- Offering broad access to information
- Preservation
- Reduce storage cost

Obstacles to Implementation of Electronic Archiving

- Libraries reluctant to give up physical copy
- Property rights in electronic media are ill defined
- Initial scanning required for creation of electronic archives

Dimensions of Ideal Electronic Archiving System

- Security
- Access
- Economy
- Openness
- Library needs
- Publisher needs
- Information user needs

Dimensions of Ideal Electronic Archiving System: Security

- Destruction due to natural hazard
- Physical deterioration of the storage medium
- Technological obsolescence
- Business failure

Dimensions of Ideal Electronic Archiving System: Access

- Standards for header information to support creation of index files
- Cost-effective search and retrieval capabilities
- Provision for sustaining accessibility
- Contract protection for access arrangements

Dimensions of Ideal Electronic Archiving System: Economy

- Archiving cost must be lower than existing cost
- Opening up shelf space/reduction in capital expense
- Less expensive access
- No longer dual subscription
- Cost recovery

Dimensions of Ideal Electronic Archiving System: Openness

- Facilitates greater access
- Ease of adaptation as better technologies appear
- Linking with other systems, both archival and online

Dimensions of Ideal Electronic Archiving System: Library Needs

- Guaranteed permanent availability
- Low and predictable costs
- Leverage existing library investments

Dimensions of Ideal Electronic Archiving System: Publisher Needs

- Provision for compliance with intellectual property rights
- Credible protection against unauthorized use
- Subscription/usage fee models which reduce publisher risks

Dimensions of Ideal Electronic Archiving System: Information User Needs

- Unprecedented power for searching and browsing archival contents
- Unprecedented power for making the contents available worldwide, around the clock, matter of minutes

OCLC Strategies

- Leverage OCLC online system
- Leverage existing OCLC services
- Leverage scanning activities
- Leverage OCLC membership and cooperative tradition
- Focus on what is practicable in the near term
- Maintain flexibility for future

**OCLC Strengths
Membership & Mission**

OCLC is uniquely positioned to participate in a cooperative endeavor to address the archive problem.

- Such a role is appropriate to OCLC's charter and mission.
- OCLC's library membership constitutes a powerful basis for cooperative approaches.
- OCLC has the requisite capabilities.

**OCLC Strengths
Storage Technology**

- OCLC's robotic tape silos will allow for very cost effective storage of large amounts of data.
- Disk can be used in conjunction with tape to offer rapid access to frequently used material.
- OCLC will guarantee ongoing migration to current technologies

**OCLC Strengths
Access**

- Using FirstSearch as the front end, OCLC can offer intuitive access using non-proprietary technology.
- FirstSearch users offer a large, ready outlet for archived collections.
- OCLC has the systems in place to charge for access (and thereby offer cost recovery).
- OCLC is staying current with access technology.

**OCLC Strengths
Scanning, Indexing, Cataloging**

- For libraries that need to digitize collections, OCLC can offer both scanning and indexing through Preservation Resources and our New Albany operation.
- Tech Pro, Prism, PromptCat, RetroConn

Electronic Archiving Pilot Project

- Selected collections mounted
- Partners include 11 content providers representing thirteen collections
- Functionality from FirstSearch/FS ECO
- Scheduled implementation: Fall 1997

Goals of the Pilot Project

- Test the technology with a variety of formats.
- Gain input from "real" users, and study usage issues.
- Demonstrate a working prototype by fall
- Validate the concept and costs in preparation for commercial release.

Electronic Archiving System Functionality

- Comprehensive search capability
- Automatic classification of each document by Dewey, LCSH, and other
- Browsing by topic areas, collection name, physical media & journal/issue
- Displays of citation, abstract and header, and full text (image, PDF, ASCII)
- Hyperlinks to GPO home page, similar documents, etc.
- Comprehensive statistics, reports, and billing if desired
- 7 day by 24 hour availability

Pilot Project Business Model

- OCLC assumes costs of loading, storing, and offering access to the data
- Content providers sign a non-exclusive license allowing OCLC to use their data through 1997 without compensation
- Statistics on usage of their material are shared with content providers

Content Providers

- Irish American Advocate
- Grand Rapids Public Library
- New York Public Library
- Follett and University of Illinois
- Northwestern University
- University of Chicago
- Council on Preservation and Access (Knox College and The Museum of the Confederacy)
- Library of Congress
- GPO

Managing the Depository Database: Some Opportunities With Shared Technology

Part I: GPRD-Institutional and Statewide Benefits of an Internet Accessible Relational Database

Nan Myers
Wichita State University
Wichita, KS

Good afternoon. Today I am sharing a session titled "Managing the Federal Depository Database: Some Opportunities With Shared Technology." My co-presenter is Tom Tyler, of the University of Denver. I am Nan Myers, Government Documents Librarian and Cataloger, at Wichita State University in Wichita, Kansas.

Part I:
GPRD - Institutional and Statewide Benefits of an Internet-Accessible Relational Database

My portion of the presentation, "GPRD - Institutional and Statewide Benefits of an Internet-Accessible Relational Database," showcases a relational database called "jeopardy," which we are developing at Wichita State as a tool for processing Federal documents. The acronym GPRD stands for Government Documents Processing Relational Database. The logo is a modified GPO eagle.

For the past eighteen months, I have worked with a colleague at Wichita State, John Williams, who is Acquisitions Manager, on the development of GPRD. During that time, GPRD has evolved from flat files, or a simple data warehouse, into a complete relational database. Now, GPRD is an information management system with data mining programs, which provide a platform for report generation and a decision-support system. In

addition, GPRD will be both LAN and Internet accessible.

In Part II of this presentation, Tom Tyler will discuss his BDLD (Basic Depository Library Documents) Web site and its relationship to depository libraries and the GPO. The common theme of the two parts of our presentation is "shared technology" and the formation of institutional relationships.

I think we can agree that "sharing" is one of our best survival tactics in the documents environment today. The electronic transition in Government publishing has impacted us all significantly. It has produced substantial change without a well-planned infrastructure. For several years our needs for state-of-the-art technology for processing and control of documents have been running ahead of standardized product development. Since most depository libraries appear to be searching for similar solutions, and duplicative efforts waste time and money, shared technology can be a salvation.

In fact, the documents community has a strong track record for sharing, especially with regard to reference access and bibliographic tools. Now, the rapid development of electronic versions of Federal Depository Library Program publications, such as the List of Classes, has encouraged depository site development of net-based processing utilities (such as GPRD)

and adaptation of electronic documents for re-publication on the World Wide Web, through value-added Web sites such as BDLD. In addition, the GPO is making strides with its partnership program development concept. For example, the Shipping List Site, which assists us with shipping list processing and label production, is at a Web site supported by UT/Arlington and SUNY/Buffalo.

To set the stage for GPRD, I will provide an overview of Government documents at Wichita State University (WSU), which has been a United States Federal Government documents depository since 1903. Wichita State is a metropolitan university, situated in the largest city in Kansas, and it has a student body of 14,000. WSU's Ablah Library is a moderately large research library and selects about 60% of the Government Printing Office output. I have listed total holdings on the slide for your information. The library has also been a full Patent and Trademark Depository since 1991.

In 1994, the Wichita State University Library embarked on a plan to increase access to the Government Documents Collection. Elements of the plan:

1) Load over 200,000 records for post-1976 imprints into LUIS, the library's on-line public access catalog, and provide for ongoing maintenance (June 1994);

2) Eliminate duplicative services between departments by mainstreaming Government documents into the automated materials flow of Technical Services (April 1995);

3) Eliminate labor-intensive tasks by developing in-house technology (fall 1995 to present); and

4) Develop a two-librarian model for documents, which would allow for excellence in both public access and technical services management of the collection. (began November 1996)

My program today focuses on item number three: "Eliminate labor-intensive tasks by developing in-house technology." When we moved documents processing to Technical Services, we realized that our Library Management System, NOTIS, did not provide a sufficient platform to manage all the record-keeping tasks mandated by the Superintendent of Documents, as we made this transition from a paper-based system to an electronic management system.

At that time, we initially identified three needs:

First, we needed to warehouse map holdings. The map collection had never been shelflisted and was not profiled for records. For ten years, maps had been listed on ledger sheets at receipt. Prior to that, map records were non-existent.

Second, we wanted to track unresolved claims and rainchecks electronically, but outside of the NOTIS LSER system for periodicals. Most of our documents periodicals are checked in and barcoded through LSER; but we do not use the LSER claim module, due to the unpredictability of receipt for documents.

And third, we hoped to provide easy storage and retrieval of item file information.

Therefore, GPRD was initially developed to archive Government documents processing information, with a check-in module for maps. The information was warehoused into a series of flat file databases in Paradox 7.0 for Windows 95 application.

However, we quickly perceived the potential of Paradox, not only to manage cumbersome tasks which had previously been handled manually, but also to provide Technical Services and Government Documents with a complete relational database. GPRD now provides a platform for report generation and a decision-support system for collection development. Let me explain how the

evolution, which is ongoing, has taken place to date.

Overview

GPRD initially consisted of information in tables, or files, most of which were imported from legacy systems—our own NOTIS database and others. Development continued such that information in these tables (essentially a data warehouse), could be associated using a query generator (Paradox's Query by Example), to achieve a discovery-driven data mining system.

The terms "discovery-driven" and "data mining" are buzz words in the relational database field, but I think they are very descriptive. "Data mining" is the process of extracting valid and comprehensible information from large databases and using it to make crucial business decisions. The term "discovery driven" refers to the quest for unknown information or patterns which can be used for day-to-day tactical decisions, as well as for long-term strategic planning and forecasting. I have provided a list of suggested introductory reading on this topic among my handouts.

The **platform** for GPRD is Borland/Corel's Paradox 7 for Windows 95. Our library's administration has provided its employees with technical support for the Borland/Corel Office Professional 7 Suite, which includes 32 bit versions of Paradox, WordPerfect, Quattro Pro, Netscape Navigator, Presentation and GroupWise. All applications are Windows 95/NT compatible, and all software is Internet-enabled. Two **computer languages** have been used for the programming of GPRD: Paradox Application Language to create the forms (or views) from the tables, and Borland's C++ Compiler for Windows 95 for the data mining features. In the future, the database will be mounted on a Novell NetWare 4.1 LAN. **Hardware requirements** for the database are at least a 486/66 PC with a large hard drive and 16 megs of RAM. **Costs** for hardware and software should be under $2,000 with academic discounts.

Functionality

The database itself consists of nine tables which are very simply designed. As you view the tables, you will notice that the primary key for the database, the common denominator of all the tables, is the Item Number **and** SuDocs Number pair. A compound key was selected as an unique identifier.

I'm going to summarize the components of each table, but only toggle over into the first one in GPRD, due to time constraints. The forms which I will show you later in my presentation contain the information in the tables and are more interesting.

The main item table contains:

1. Main Item Table: Item Number/SuDocs Number
    Title and Agency
    Active and/or Selected

2. Format Table: Item Number/SuDocs Number
    Format Type: P, MF, E

    Format has its own table, because format constitutes a many to one relationship. That is, many formats can be attributed to one item number/SuDocs stem pair.

3. Library Table: Item Number/SuDocs Number
    Library ID

    (This table provides a State of Kansas Union Listing for Current Items selected. You will notice that the proper names of the libraries are displayed, rather than their depository numbers or their NUC symbols, which is the data available in files from the GPO and BDLD, respectively. We wrote a program to convert this information to allow quick recognition by the user.)

    This is our largest table, containing 62,000 item records, because individual item records are in the database for each institution which selects that record. In

other words, an item record could have as many as 18 duplicates in GPRD.

4. Maps Table: Item Number/SuDocs Number

    Map Number and Date
    State/Region
    City/Area
    Inspected
    Copies

    The Map Table is our only use of this database for bibliographic check-in. GPRD could be adapted for this purpose, however.

5. Rain/Claim Table: Item Number/SuDocs Number

    Shipping List Number
    SuDocs Extension/Piece
    Title
    Claim or Raincheck
    Record Date
    Result

6. Use Table: Item Number/SuDocs Number

    Month/Year of Use
    Total of Use for Month/Year

7. Subject Table: Item Number/SuDocs Number

    LC Subject Headings

8. Note Field Table: Item Number/SuDocs Number

    Notes from the Discontinued List

    This table is new. It was added to accomodate the field for notes, which appears in the Discontinued List, but not in the List of Classes.

9. Library Key Table: Depository numbers from the State of Kansas with their proper names.

Original Implementation

In developing GPRD, we consciously incorporated as much extant information as possible. In addition to our original "three needs"– for maps, claims, and item file–we included the State of Kansas Union Listing for current items, LC subject headings for our current items, our GPO and Marcive profiles, and external use data. Check-out data for documents at Ablah Library is unautomated and has only been maintained since 1990. This was the first time we have been able to assess this data.

The initial work, done in the fall of 1995, pre-dated the ASCII text files available online today from the Government Printing Office.

*   At that time, we acquired an Item File from Margaret Mooney at UC/Riverside on diskettes for around $100.

*   Then, we imported the State of Kansas Union Listing distributed to us on diskettes by the Documents Librarian at Washburn Law Library.

*   Our Marcive profile was another diskette import,

*   but our GPO profile was "pre-Item Lister" and was originally keyed in by a student.

*   Other data keyed in included:
    un-automated check-out data for the use file,
    information in the map file

*   Finally, to obtain an initial sample of about 400 LC subject headings from our Government document bibliographic records, a programmer from our computing center ran extract programs written in COBOL from our NOTIS system.

Utilization of the Data

We then worked to identify and utilize information hidden in these tables. The goal was to organize the information in ways that

enable decision making. Requirements for this phase of the development included:

1) Integrating the captured data into task-specific VIEWS or FORMS (rather than tables) for Online Transaction Processing.

2) Extracting or mining the information contained in the integrated data using queries for Online Analysis Processing.

3) To achieve this, software had to be written. The **design** of the database was accomplished in the spring of 1996 to our specifications by a team of four graduate students directed by Professor Sunderraman of our Computer Science faculty. At Wichita State, we have been fortunate to build cooperative relationships between departments. It is another example of sharing for survival.

Task-Specific Forms

GPRD currently has six task-specific forms or views: the LIBRARY FORM, the FORMAT FORM, the MAP FORM, the RAINCLAIM FORM, the SUBJECT FORM, and the USE FORM.

I'm now going to toggle over to the database and show you the forms.

1. We call the enhanced Item File the LIBRARY FORM. The LIBRARY FORM includes and can access:

   1) Item Number
   2) SuDocs Stem
   3) Publishing Agency
   4) Title
   5) Whether the title is active in the List of Classes
   6) Whether WSU selects that title
   7) Format Information
   8) LC subject headings for that title
   9) The Kansas Union Listing for the title
   10) Usage count for the title by month and year
   11) Claims and rainchecks notations

2. The FORMAT FORM shows:

   1) Item Number
   2) SuDocs Stem
   3) Format selected by our Depository

3. The MAPS FORM provides:

   1) Item Number
   2) SuDocs Number
   3) Map Number
   4) State
   5) City and Region
   6) Date of Map
   7) Whether we have inspected the map
   8) Number of copies
   9) Information Space: There is information for Technical Services use on the lower portion of the screen, showing the agency name, all titles connected to this Item and SuDocs stem, whether the item is active and whether it is selected.

4. The RAINCLAIM FORM provides a date-linked log of all pieces missing from shipping lists and claimed or rainchecked. Fields include:

   1) Item Number
   2) SuDocs Stem
   3) Shipping List Number
   4) Extension of the SuDocs Number
   5) Action Date
   6) Whether it is a Raincheck or a Claim
   7) Title

The SUBJECT FORM includes:

   1) Item Number
   2) SuDocs Stem
   3) Title
   4) Subject(s) for that title

The USE FORM shows:

   1) Item Number
   2) SuDocs Stem
   3) Agency
   4) Title
   5) Date of the Use (month and year)

(All days default to the first of the month)

6) Number of Uses

Building On the Work of Others

I have already discussed the initial building blocks of our data warehouse. These were a good beginning; but in the past six months, we have replaced the data in these tables via Tom Tyler's BDLD, which is a value-added Web site, or network--often called a VAN.

BDLD as a VAN for GPRD

Last fall, I phoned Tom Tyler to compliment him on his very useful and attractive Web site, the BDLD. I was interested in his Union Listing for the State of Colorado, which Tom had extracted from a tape of depository library profiles he purchased from the GPO.

Once again, the time frame last fall was "pre-Item Lister," and depository profiles were not yet available from a GPO Web site. In addition, Washburn Law Library had abandoned updating the Kansas Union List, and I was seeking an alternative to manual keying of data. Subsequent discussions yielded a mutual agreement that GPRD could import data from the BDLD. We chose to derive data from the BDLD rather than from the flat files available from the GPO because the BDLD provides uniform data. Tyler has been committed to developing and maintaining Government document computer files, as well as scrubbing that data, for over 15 years.

Features Imported from the BDLD to Date:

1) WSU's List of Item Selections (our profile)
2) Kansas Union List (18 other Kansas depository profiles)
3) List of Classes
4) List of Discontinued Items

Implementation of Those Features at WSU:

• **The BDLD to GPRD Data Migration** (please refer to the Four Step Data Mining handouts):

1) The BDLD Web site (data as we view it)
2) BDLD HTML Source Code (data available for data mining)
3) Bar Delimited ASCII File Sample (data mined from BDLD after conversion by C++ extract program written at WSU)
4) Sample Report Output (Data after import into GPRD)

• We decided to **merge the List of Classes with the List of Discontinued Items** in order to create the largest possible number of entries of post-1976 imprints for our Cataloging Staff. An additional field was created in GPRD to accept notations on titles available in the Discontinued List.

• The **programmed refresh of the GPRD database tables** required program(s) written in Borland C++ for Windows 95 for creation of bar (|) delimited text files. There are three of these files: main item file, format file and library file. These files are extracted from the BDLD Web site, imported into Paradox, and in the process, converted into Paradox tables. We are using a temporary directory for all imports and deriving the information over to the main directory after checking it.

The BDLD **arrays the List of Classes and the Discontinued List.** We re-array the data to suit our database design, in particular 1) the format table and 2) default values on current and discontinued items. For GPRD, the format constitutes a many to one relationship, as I stated earlier in discussing creation of the original tables. That information has to be isolated into its own table. With regard to defaults, in the List of Classes, we created the default value "Yes" in the active field. In the Discontinued List, the default value is "No" in the active field. The defaults are the

distinguishing feature once the two lists are merged. In other words, when you look at the list of titles, you can distinguish between active and inactive.

In order to accomplish this programming, John and I once again depended on departmental cooperation at WSU. All of the C++ programming has been done by Professor Xumin Nie of the Computer Science Department. He has made his Web site available for the **Data Miner for GPRD**. The address is: http://riker.cs.twsu.edu:1081/~nie/GPRD/main.html.

• Once the above tables are created, two queries are run to create an intelligible Kansas Union List of Depository Holdings. This process is detailed in a handout titled "Data Mining with GPRD," which I have with me and would be glad to share with anyone interested after the program.

• All of the text files are converted into tables in a temporary directory. When we have verified the accuracy of the files, they are derived over to the permanent project directory.

Report Generation

An extremely useful aspect of GPRD is report generation. As I have stated, GPRD provides a platform that allows all the diverse data in its tables to be quickly extracted and associated. The staff can initiate standard, pre-programmed reports, or they can produce ad hoc reports using Query By Example (QBE).

There are three types of reports we plan to generate regularly:

1. **Map Reports:** Reports can be created for our topographic map holdings by state or by SuDocs stem. These reports can be exported to QuattroPro and laser printed for use at the map cases.

2. **Claims and Raincheck Reports:** Information on shipping list claims and

rainchecks is warehoused for periodic retrieval and review. At intervals, we print a report to forward to the Documents Information Librarian, so she can review missing titles. An action box to the right of each title allows her to request: 1) acquiring the title through Interlibrary Loan, 2) purchasing the title, or 3) disregarding the title.

3. **Collection Management Reports:** Because of the space limitations in the Government documents area of Ablah Library, this type of reporting may play a crucial role in collection management decisions. At Wichita State, documents now occupy 86% of their allocated space. We have been told that we should not expect additional space for 15 years; therefore, we must look seriously at zero physical growth.

GPRD can provide:

A) **Subject Analysis Reports:** Several subject analysis reports can be used for decision support.

1. A simple subject analysis of selected/active items can indicate whether those items support the curriculum.

2. The addition of subject headings to use report, will correlate subject distributions for high, low, and no use titles.

3. Agency distributions can be aggregated within subjects and use.

B) **Usage Reports:** GPRD contains external use data from January 1990 through December 1996. Titles which have circulated can be reported in SuDocs number order or in ascending or descending order by use tools. Use data can also be queried by format.

C) **Kansas Depository Library Reports:** Knowledge of the collections of other

Kansas depositories is helpful for interlibrary loan support. We can also make demographic analyses of the distribution of titles through our state. A title in our collection with no demonstrated use, which is available in 14 other depositories in the state might be a good candidate for weeding or de-selection. In addition, the ability to associate data on statewide holdings could underwrite cooperative collection development in Kansas at a time when many of our colleagues are feeling the stresses of space, costs, staffing and accountability.

Conclusion

In summary, GPRD allows us to:

1) Reduce labor-intensive tasks in a period of reduced staffing.
2) Permits us to accomplish inspection requirements.
3) Frees us to address issues of public access in an electronic era.
4) Allows for pro-active rather than re-active decision making.
5) And, can facilitate cooperative statewide depository goal-setting.

In conclusion, I should mention that GPRD is an ongoing research project. In the near future, we plan to:

1) Link GPRD to the Internet, so that other depository libraries in Kansas can access it from a Library home page.
2) Network GPRD to the LAN so that all library employees can get to it.
3) Develop a project to study internal use of documents.

On the one hand, GPRD is a very specific product, tailored to the needs of one university. On the other hand, it represents a multitude of generic needs, and the concepts used in GPRD's development can be duplicated anywhere.

The development of GPRD represents a proactive stance during a period of uncertainty and change in the history of Federal documents. I believe that as Wichita State and other depository libraries in the same position share their resources with the GPO, a synergy will be achieved. Eventually, the GPO will provide a standardized set of tools for working on documents in the 21st century. However, the need for ingenuity in the field will not disappear. And with that thought, I will turn the program over to Tom Tyler.

Define terminology:

First, for those who are not familiar with the concept of a relational database, let me define some of the terms I will be using. A **database** is an organized collection of information or data. If you have an online address book, you have data organized about people into specific categories or tables, such as names, addresses and phone numbers.

Now, if you also have a birthday book that contains birthdays of your family and friends, and maybe some information about their clothing sizes and favorite colors, you have a second database. With two databases and two tables, you have the beginning of a **database system.**

Some database systems look at only one **table** at a time. These are called **flat file systems.** If you use this kind of system, the terms **table** and **database** mean the same thing. Using the example of the address book and the birthday book, you would be able to look at one at a time, or see the names and addresses in one book and the names and birthdays in another book. You would not be able to combine selected information from both tables.

However, with a **relational database**, such as Paradox, you can extract specific information from each table and assemble it in a meaningful way. Using the address and birthday books example again, if you wanted

to see a list that includes a friend's name, address and birthday, in a relational database, you could link the address and birthday tables by identifying a common field ("Name"). Then, you would be able to combine the kinds of information you want to see from both tables.

Paradox keeps the tables in a database separate, but understands there is a relationship between them. In a relational database like Paradox, the term database means all your tables and all their relationships. Paradox requires the use of a **primary index** (or **primary key**) used in each of the tables to provide the common link.

When you begin to use a relational database, you probably will not know all of the potential relationships among the tables. But, eventually, you will discover them. You will probably have to dig for them, which is referred to as **data mining**. Data mining is the process of extracting valid, comprehensible and previously unknown information from large databases and using it to make crucial business decisions. Other terms related to this

analogy to mining are: **discovery based data mining**, which refers to seeking unknown but valid information or patterns; **data exploration**, digging through large amount of historical detailed data;and **drill-down technology**, which suggests searching deeply into the information.

Another much-used term is **data warehouse**, which is simply a place to store data. The implication in warehousing is that you are managing the database in some way, probably for some kind of decision-support. A **data warehousing system** provides a complete end-to-end solution for delivering information to users. You will be able to process the stored data, transforming it into business information. You can obtain the data from your internal systems, from external information providers, and most recently, from Web servers. The resulting information you acquire can be instrumental in making tactical decisions about day-to-day business operations and also for strategic decision-making involving longer-term planning and forecasting.

Managing the Depository Database: Some Opportunities With Shared Technology

Part II: BDLD and GPO: Creating a Database of Fundamental Depository Information for Web Access by Depository Libraries

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Just in Time is a Japanese production and distribution model copied by many U.S. and international manufacturers. It operates on the assumption that, as a producer, you have what you have to have when you need it. Large inventories and the facilities to house and manage them are not needed. Resources are used wisely. The benefit, we are told, is greater efficiency and lower costs in production. Savings can be passed on to the customer through lower prices. In the marketplace, such a producer gains a "competitive edge" and hopefully, greater market share.

What would **Just in Time** mean for the Federal Depository Library Program?

- Separates would never stack up on a shelf or work table awaiting shipping lists

- Electronic representation of Class/Item Number and minimal bibliographic information would be immediately available to:

  1. Create **abbreviated records for the OPAC** with item level information such as bar code number, location, and class number;

  2. Create appropriate **labels** with SuDocs Number, shelving location, property and depository stamp information;

  3. Maintain **statistics** for receipt and processing; and

  4. Generate **"pull slips"** for material being superseded or for class corrections.

- Many of the activities associated with dealing with **corrections** in cataloging and classification would be significantly diminished.

- **Typing/data entry errors** for Item Numbers and Class stems would be a thing of the past.

- **Reports** could be generated to simplify the correction of records in the local OPAC or depository database.

- Local information for **new depository items** could be captured and added to your depository's profile for subsequent sharing with depository partners or vendors.

- Recording **rainchecked and claimed** materials could be significantly simplified.

While there are certainly more benefits than those enumerated here, I'm sure that most of us would be at least moderately satisfied if it were possible to achieve the above in a reasonable amount of time.

Actually, we are very close to this nirvana state right now. In the past year LPS has made several of the basic data tools needed for **Just in Time**-type processing available to libraries in electronic format. The Internet and the World Wide Web give us the means to acquire this data. To go further there are a few additional data files that either need to be modified or added to those that are currently available.

Current Depository Library Data

There is an abundance of electronic data available to depository libraries to help in the daily processing of depository documents, but there are some obstacles to the effective use of this data. One or two of the basic tools we need to move to "just in time" are not available at the time we need them or in a form that lends itself to immediate use.

File Availability on the World Wide Web/Internet

When I look at what data is available for use by individual depository libraries on the Internet/World Wide Web, I see the following:

- **Files or Web pages created for viewing with a Web browser.** Each of the 1200+ pages/files served from my Web site - Basic Depository Library Documents (BDLD) [URL: http://www.du.edu/~ttyler/bdldhome.htm] - are in this category. As such they are useful for database creation by only the patient and knowledgeable few. When, as is often the case, the files are alternatively available in another format, the data may be acquired for local database creation.

  In some cases, as with the GPO Access Monthly Catalog (which is now actually something more and something less that the print or CD-ROM version of the same

title) there is only an online version available for viewing. Because records in the database are retrievable one at a time and because there is no downloadable file containing the same data, use of this valuable resource by most depository libraries for catalog record production is not possible.

- **Files created for downloading.** The List of Classes, Profiles, and Depository Shipping Lists are in this category. The List of Classes is available in CSV (comma separated variables) format, which is very versatile and permits data to be easily imported into spreadsheets, flat file managers and relational databases.

  The dBase format used for **Profiles** (the directory of depository libraries) and **Depository Shipping Lists**, is perhaps less forgiving than CSV, but is nevertheless an effective way to allow for data interchange.

- **Neither/Nor files**. Some files we encounter seem to be meant neither for viewing nor downloading. The FDLP Administration Publications versions of the **Superseded List** and **List of Classes** which are served as Web pages fall in this category. Until November 1996, the **Administrative Notes - Technical Supplement** lists for corrections, changes and additions to the **List of Classes** fell in this category. Now this publication fits nicely in category one: files for viewing, but unfortunately there is no good alternative for downloading.

What is needed is uniformity, standardization and a wider appreciation of the potential use of depository-related data files. The comma delimited format is perhaps the most versatile because there are no parameters beyond number of fields per record that have to be considered in the downloading process. dBase formatted records are probably the next most useful format, but only if there is standardization and consistency in the number of fields, their names, lengths, and properties.

GPO - Rebuilding the Depository Information Infrastructure

Item Lister:

This valuable Web page was introduced by GPO/LPS in December 1996. It permits depository libraries to download their current list of item selections. Changes made to the original offering and formally released in February now permit libraries to select output modes that are appropriate to immediate needs, whether for viewing or for downloading.

List of Classes:

44 USC 1904, (Classified list of Government publications for selection by depositories) is the statutory basis for the List of Classes:

> The Superintendent of Documents shall currently issue a classified list of Government publications in suitable form, containing annotations of contents and listed by item identification numbers to facilitate the selection of only those publications needed by depository libraries.

The List of Classes is a very changeable database. My experience is that annually, between 10 and 20 per cent of the records are changed in some way each year.

With the release of the April electronic version, GPO has completed one year of regular, timely publication of this important tool in a usable electronic format.

LPS staff efforts to clean up the List of Classes are certainly appreciated. As much of the useful data in this database is hidden or embedded within the free-form "title" area (e.g., frequency, format, report series designation, notes, etc.), it would be helpful if LPS would separate these data elements out so they can be used in an automated setting.

Closer correlation of List of Classes data with other resources of the depository program might also be considered. Some examples:

- Title equivalency when appropriate with cataloged titles;
- Separate data elements for OCLC and other standard numbers; and
- Provision for URLs (Uniform Resource Locators).

While the law requires that the List of Classes indicate currently "active" items that may be selected by depositories, it would be helpful if the database included inactive items also. This information is generally required for some aspects of local record processing and is necessary for database control at the local level. For many depositories, keeping track of additions and changes to the List of Classes database is considered next to impossible because so many print and electronic sources have to be consulted. A single authoritative source would certainly be welcome.

The "unauthorized" BDLD List of Classes - Additions & Changes attempts to monitor the more common resources where change information is to be found. While I have not been able to include Shipping List notice of changes as frequently as I would like, what I've noticed is indeed interesting. **No single source can be relied on to reflect all changes**.

Administrative Notes - Technical Supplement:

The most important sections of **Administrative Notes - Technical Supplement** for local database control are:

1. Classification/Cataloging Update
2. Update to the List of Classes: Miscellaneous;
3. Update to the List of Classes: New Item Numbers; and
4. Update to the Superseded List.

While these files have been available in electronic form for several years, they require significant massaging to make them usable in a database environment.

A CSV (comma separated variables) format would be appropriate (and useful) for these files.

Inactive List:

This important publication needs to be available to depositories. Currently the BDLD version is the only net-available Inactive List that I know of. Local depository processing database applications need this data to work with older cataloging records and with recently deactivated item numbers that continue to be distributed or cataloged due to backlogs or format reproduction.

Superseded List:

This file is available in several formats and the text version can be readily converted to database use.

Electronic Shipping Lists:

Electronic versions of Depository Shipping Lists are now available from three Web sites in as many formats.

- GPO Access serves shipping lists in dBase format from the Federal Bulletin Board.

- BDLD provides HTML format shipping lists suitable for printing and useful for in-house processing.

- The University of Texas-Arlington serves Shipping Lists in an a-la-carte (or user selectable) format.

- Commercial vendors (e.g., Marcive and Bernan) also provide this data via FTP or diskette.

While the commercial shipping list products at best reproduce only the errors on the paper versions, the new electronic Shipping Lists probably contain many more errors that are beyond the usual transposed numbers or mistakes in transcription.

Unlike the paper counterpart, electronic shipping lists illustrate the following rule: **More errors can be made by fewer people in less time.** Many of these errors seem to be related to the production environment.

- Date information that should appear as 6 digits in the format "yymmdd" sometimes appears in the currency format expressed to two decimal points;

- Titles are sometimes truncated due to faulty column width settings in the production software, and

- Item number data, which should be formatted as text, is formatted as numeric and thus leading zeros are stripped off.

Other difficulties in using the electronic shipping list data in a database environment are related to administrative decisions about which data fields are included and how they have been specified:

- Uppercase/truncated title data appears for microfiche shipping lists, and

- At least initially, during the experimental stage, the lack of shipping list date.

Like the paper lists, the electronic versions would benefit from standardization of entry:

- Information for serials should emphasize in a standard way the enumeration and chronology of the material described.

- Information for monographs, whether in series or not, should emphasize the unique title. Most of us who work with depository material recognize that AE 2.110:104-188 indicates slip law 188 of the 104th Congress. The title "Public Law No. 104-188" would not be all that helpful if loaded into an online catalog.

Monthly Catalog:

> No substitute can be found for the cards in
> library records; and the problem of actual
> use of the books in the libraries will never
> be solved until cards are supplied in
> sufficient numbers to provide for the
> proper entries in the various library
> catalogues fully covering every publication
> issued to them. – William L. Post,
> Superintendent of Documents (Annual
> Report of the Public Printer for the Fiscal
> Year Ended June 30 1907, Washington,
> GPO, 1907, p. 340)

In the same report, the Superintendent of
Documents quotes Richard R. Bowker, editor
of the Library Journal:

> [re: analytic card sets for documents] I
> don't think there could be a greater saving
> to the libraries than a system of that sort.

Depository libraries should be able to acquire
and use GPO's current cataloging production
in their local OPACs.

44 USC 1711, (Distribution and Sale of Public
Documents) requires the Superintendent of
Documents to "prepare a catalog of
Government publications" and to print the
catalog in pamphlet form. Shouldn't the
database from which the current Monthly
Catalog (indeed in pamphlet form) is printed
be available to depository libraries in machine
readable form?

As we have been reminded in recent
GOVDOC-L communications, the Monthly
Catalog database is an orphan. Created by
GPO, it is sold by Library of Congress, OCLC,
Marcive, Autographics and others, yet it is not
maintained as a database by any single agency.

In fact, even with a super abundance of sellers
and suppliers, it is probably impossible to
acquire from one source, in electronic form, all
the records that correspond to their equivalent
in the printed Monthly Catalog.

The depository library community needs a
single, authorized, maintained database.
Depository libraries should have free, timely,
and efficient access to the records in this
database.

For many years libraries that have used GPO-
MARC records in their online catalogs have
had to work around problems caused by the
printing requirements for the Monthly Catalog:
for example, the repetitive cataloging of
semiannual serials and the annual reissue of
unchanged records for "periodicals." Now
that the printed Monthly Catalog has been
reduced to an unimportant shadow of its
former self, shouldn't these disruptive and
costly practices be eliminated?

The database should represent record creation
and maintenance, not the printed Monthly
Catalog. Ready access to this database by
depositories is one of the major obstacles to
permitting libraries to move towards a "more
electronic" processing environment.

With current technology, current GPO
cataloging in USMARC format could be made
available to depositories on a daily or weekly
basis via FTP.

Implementing Database Controls in LPS

The most irritating classification and item
number corrections encountered by depository
libraries are those that are merely
typographical errors made during the shipping
list creation process. Not only do these
mistakes require hundreds of man/woman
hours to correct in libraries across the country,
they play havoc with automated systems.

Were LPS to create (or at least verify) shipping
lists in a database environment, such errors
could easily be eliminated at the source.
Implementation of such as scheme by LPS
might also provide for:

• Controlled processing for adding or
creating new Item/Class categories;

- Automatic updating of announcement tools for additions, deletions and changes (e.g.; Administrative Notes - Technical Supplement); and

- Simultaneous updates to electronic files that make up the List of Classes, the Inactive List, Superseded List, and the Item List.

Role of the Depository Library Community

It is in the depository library community where the challenge (and potential) is greatest. Can we find the interest and skills among our collective personnel and resources to develop sharable tools to deal with the data that is (and can be made) readily available?

We will need libraries to collect and distribute the "value added" elements of relational database technology: macros, query design, specialized functions or programmed subroutines, table design, API's for different library systems, etc.
We will need a new vocabulary for defining and describing our data and activities.

Conclusion

In the past year the depository library community has experienced significant and increased access to basic bibliographic and control data resources that have the potential to greatly simplify local depository processing activities. With the exception of the Monthly Catalog, there are database tools in place that now permit depositories to extend processing to creation of records for local online catalogs (OPACS). GPO/LPS efforts are to be commended. If the few remaining gaps in available data and/or formats are addressed in the coming year, **Just in Time** will be a possibility for all depository libraries.

URL:
http://www.du.edu/~ttyler/dlc97.htm
(for abstract & graphics)

Permanent Access Planning: Preservation of USDA Digital Documents
Recent Preservation Activities at the National Agricultural Library

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The purpose of this session entitled "Permanent Access Planning: Preservation of USDA Digital Documents" is to describe what we think is a unique, proactive, and collaborative approach to preserving and ensuring access to digital publications from one of the largest Federal agencies, the U.S. Department of Agriculture (USDA). The approach we will tell you about has strong support from USDA administrators.

The four speakers on this panel will cover the topic in this fashion:

- I will provide some background on the National Agricultural Library (NAL) and its recent preservation activities;

- Greg Lawrence from Cornell will outline the steps that led up to a major 2-day conference held last month to focus on the major elements and requirements of a digital publications preservation plan for USDA;

- Evelyn Frangakis from NAL will talk about what actually happened at that conference; and

- Paul Uhlir, a consultant with major responsibilities at the conference and since, will discuss the results of the conference.

Let me begin with a brief overview of the National Agricultural Library. NAL is one of four national libraries--the others are the Library of Congress, the National Library of Medicine, and the National Library of Education. NAL is part of USDA's Agricultural Research Service and serves as the departmental library for USDA and as a national library. USDA was charged with the role of "acquiring and preserving all information concerning agriculture" when Abraham Lincoln established USDA in 1862, and NAL has that primary responsibility.

NAL is located in Beltsville, Maryland, just outside Washington, DC. The library occupies a 14-story building, and has a collection of 2.2 million volumes, a staff of more than 200 Federal employees and contractors, and a budget of approximately $20 million per year. The collection is international, and covers the literature on all aspects of agriculture and related sciences and social sciences. The information and database services of NAL are available to anyone.

The mission of NAL, in brief, is to ensure and enhance access to agricultural information for a better quality of life. The importance of "Preservation" is mentioned in NAL's full mission statement, in its values statement, and in its vision statement. "Preservation" is also a part of one of NAL's three strategic planning key result areas, and one of the library's eleven general goals is devoted to preservation. Key

result area number 2 is titled "Collection Enhancement and Preservation," and the definition reads:

> The goals under this key result area address how the NAL staff will ensure that agricultural information essential to the Nation is identified, acquired and preserved at the local, national and international levels.

An important part of that definition is the last part–NAL does not do everything itself, but instead collaborates with the land-grant community and other organizations to make sure that agricultural information is preserved.

Despite the emphasis on preservation in all the key documents mentioned above, NAL has not had significant resources to devote to preservation activities. NAL budget initiatives to improve preservation efforts in the 1980's were never successful. Even without additional funding, however, NAL was involved in several preservation-related activities beginning in the late 1980's.

1. In 1989, NAL did a preservation self-study that was facilitated by the Association of Research Libraries/Office of Management Services. The resulting publication is entitled A Preservation Plan for the National Agricultural Library.

2. Based in part on that report, a special preconference on the preservation of agricultural literature in the U.S. was held at the 1991 conference of the U.S. Agricultural Information Network (USAIN)–an association of individuals and organizations interested in agricultural information. One of the topics explored at the preconference was the development of a national plan for preserving agricultural literature.

3. Following that preconference, USAIN asked Nancy Gwinn of the Smithsonian Institution Libraries to work with a task force to develop such a plan. In 1993, that plan was issued as A National Preservation

Program for Agricultural Literature. That plan outlined preservation responsibilities for specific subsets of agricultural literature and proposed which institutions should have which responsibility. NAL used the report as the basis for a request for Congressional funding that would enable the Library to meet its responsibilities in a national preservation program.

4. In FY 1996, Congress approved funds for NAL to build a stronger, better focused internal preservation program and to assume its leadership role in coordinating national preservation efforts. In the short time since funding was received, several activities have been initiated at NAL. These activities parallel the recommendations from the USAIN report and include the following:

- In January of this year, Evelyn Frangakis joined NAL as our first full-time Preservation Officer.

- A comprehensive analysis and evaluation of NAL's microfilm holdings is being conducted to ensure long-term preservation and access to these materials.

- NAL has moved into the digital preservation arena by digitizing approximately 15,000 pages of Federal agricultural documents.

- A plan was implemented to upgrade NAL's Special Collections program to preserve and improve access to NAL's rare and unique materials.

NAL and its library partners have well established procedures for collecting, managing and preserving the hardcopy print literature. As the agencies of USDA move to electronic dissemination of their serials and reports, NAL has developed new procedures to handle electronic formats, and has become the lead organization within USDA for addressing the broader issues faced by agencies that issue electronic publications. One of those issues is

how to ensure access to those electronic
publications for future generations.

That broad issue–how to preserve and provide
perpetual access to USDA publications in
electronic format–will now be addressed by
the other speakers.

USDA Publications: Creating a Preservation Action Plan: Planning Summary

Gregory W. Lawrence
Cornell University
Ithaca, NY

Introduction

As you all know, the U.S. Government collects an enormous amount of public information and is in turn a huge publisher. The U.S. Department of Agriculture (USDA) economic agencies, the Economic Research Service, the National Agricultural Statistics Service, and the World Agricultural Outlook Board, are no exception to this phenomenon. Where they are different is how early each of these agencies adopted digital technology in order to disseminate their information. In the mid-1980's, these agencies disseminated time sensitive commodity reports via the Martin Marietta CIDS system, and a decade later, they are working with the Albert R. Mann Library at Cornell to disseminate this information on the Internet. Their partnership with Mann Library has created the USDA Economics and Statistics System, a network accessible, research-level core collection in agricultural economics. The collection now includes 79 full text serials, over 200 historic data series, and grows by some 400 Mb per year.

When this partnership began three years ago, USDA digital publications duplicated print documents. Issues concerning the authority and preservation of the digital files were minimized by the broad availability of the print copy. Unfortunately, the economic agencies are slowly phasing out print publications. For instance, ERS (Economic Research Service) has converted the Situation and Outlook commodities series to a digital only format. Or, the agencies are creating new publications which do not have a print counterpart, such as the NASS (National Agricultural Statistics Service) Crops County Data annual. As the USDA Economics and Statistics System grows it is gradually becoming a unique, definitive collection of digital USDA information.

The Problem

Maintaining this collection for future data users presents serious management problems.

First, we are confronted with the need for data migration. Obsolescence of the original data format is a barrier to the long term use of the data. Data-sets and reports are prepared with a wide variety of formats, including plain ASCII, formatted text such as PDF, spreadsheet files and binary files used by proprietary software. It is unclear how, and by whom, these publications with different file structures will be converted to new file formats as computing standards change. Clearly, a non-Federal organization such as Mann Library should not modify USDA publications without official oversight, since this runs the risk of violating the authority of the document.

The second problem is the need to move the data to an appropriate storage medium. We perform a routine backup of the USDA system, but the procedure saves only a copy of the information as organized in a hierarchical file system. To retire aged data in an appropriate manner requires a full range of processes, such as file collation and verification, and the use of archiving and compression software. Ultimately, the data must be copied to the proper medium such as magnetic tape cartridge or CD-ROM.

Unfortunately, the data management procedures and the storage medium for these documents have not been specified, either by the three agencies, or the Department. This inhibits the library from taking proactive steps to preserve this information, since without offical guidance the effort may be wasted if it doesn't ultimately conform to a Departmental standard.

If the problem were local to the USDA Economics and Statistics System there might not be much alarm. But we have been contacted several times to verify if we will preserve the data we hold, and it has became clear the problem is generating considerable concern. In the meantime, agency home pages are filling up with digital publications, and other academic/USDA partnerships, similar to the one at Mann Library, are developing large data collections elsewhere on the Internet. The result is a rapidly expanding body of digital information which potentially is at risk because there isn't a general policy to coordinate the safe and systematic transfer of digital documents to a final repository.

This issue was raised at the USAIN (United States Agricultural Information Network) Preservation Steering Committee meeting held last June at the Library of Congress. Committee members felt this topic was important enough to recommend a national meeting to discuss extending the national preservation plan for agriculture to include USDA digital information. The National Agricultural Library was the first organization to commit strong financial support for this meeting, and was later followed by the Economic Research Service, the Government Printing Office, and the Farm Foundation.

The Stakeholders

Any coordinated preservation effort will have a large number of interest groups, or stakeholders, who need representation. Stakeholders for USDA information sort themselves into three groups:

1. Those directly involved or affected by the preservation of USDA information or those who coordinate or support similar activities in other Federal agencies.

2. The dedicated information user involved in business, education or policy development.

3. The less demanding, yet very important user found in the general public.

We felt a planning committee for the conference would represent primary members of these three groups, and broader representation could be established by selectively inviting the other 60 attendees.

Putting together a planning committee to represent the broad interests of agriculture is at best a series of trade-offs. It must be large enough to represent and deliberate, but also to make decisions. It must have members with sufficient expertise to advise and contribute to problem solving. And it must have members who can perform a variety of roles during the planning stage and at the conference. In the end we constituted a planning committee with the following members:

• USDA NAL - Pamela André, who is the Director at NAL. NAL is one of four national libraries, and serves as the library for the Department of Agriculture.

• USDA ERS - Jim Horsfield, an administrator for the Economic Research Service who helped establish the USDA site at Mann Library.

• USDA CIO - Bob Whiting, sitting in for Anne Thomson Reed, the newly appointed Chief Information Officer.

• GPO - Duncan Aldrich, a depository librarian, with a one-year appointment to the Electronic Transition Staff at GPO.

• USAIN - Antoinnette Powell, Director of the Agricultural library at the University of Kentucky, and President of USAIN, the

United States Agricultural Information Network, an organization which represents the agricultural information interests of land grant universities and colleges, agribusinesses, and private organizations.

- Mann Library - Sam Demas, Head of Collection Development and Preservation. Sam has coordinated several cooperative preservation programs, including one which will have 16 participating institutions.

- Farm Foundation - Steve Halbrook, Assistant Director. The Farm Foundation is an unconventional organization with an interest in the social and economic implications of new technologies applied in agriculture and rural life.

Our committee selections were excellent. Each member contributed considerable time, energy, and many constructive suggestions.

The Resources

The major preconference Planning Committee meeting was in October of last year. This meeting had two purposes. One was to identify and discuss the pressing issues that would be at the focus of a national meeting. The second was to establish the personal relationships that would help facilitate the Committee process through the many months of planning.

Helping us set an agenda for a preservation conference were two documents: one a report on digital preservation, the other an action plan for preserving print information.

The first item is the report Preserving Digital Information, prepared by a task force appointed by the Commission on Preservation and Access and the Research Libraries Group (RLG). This report, written by Co-Chairs Donald Waters, Associate University Librarian at Yale, and John Garrett, CyberVillages Corporation, with input from task force members, framed the key problems that need to be resolved to ensure continuing access to

digital documents. The Planning Committee drew four major points from that report:

1. That digital migration is more than "refreshing" or rewriting digital information. Data migration is a specific set of tasks which must be followed when transferring information from one hardware/software configuration to another, or when moving from one generation of computing to another.

2. Digital archives are distinct from digital libraries in the sense that digital libraries are repositories that collect or provide access to digital information but may or may not provide the long term storage for that information.

3. Digital archives must be certified by an independent program.

4. The preservation responsibility initially rests with the creator or owner of the information. This last point is critical. A digital dissemination system is fluid and dynamic, with a single master generating multiple copies. Responsibility for the preservation of that master copy must reside with the creator of that document. This responsibility may be delegated to others, but when this is done, the delegation must be visible, clear and lawful.

The report also calls for discipline-specific preservation plans and pilot programs.

The second document is a preservation action plan adopted in 1993 by USAIN. This document, A National Preservation Program for Agricultural Literature, was prepared by a consultant, Nancy Gwinn, of the Smithsonian Institution, with assistance from the USAIN Advisory Panel on Preservation. The plan envisioned a systematic, organized, and coordinated national program combined with local initiatives. The plan also anticipated a need for sustained digital preservation efforts by recommending the implementation of scanning technologies to lay the groundwork

for electronic access to preserved agricultural literature.

This plan has received national recognition as a sound model for a discipline-specific preservation program. This approach fits well with the objectives of the conference, since we were attempting to preserve not all government information, just the narrow slice from the USDA.

Key points of the plan include:

1. Preservation efforts must employ all relevant archival preservation standards and guidelines.

2 Preservation techniques used will not require uncommon or proprietary equipment.

3. All preserved materials will have bibliographic access.

4. All preserved materials are to be made easily available at low or no cost to the user.

These points either matched or fit closely those of the RLG report. The two documents provided a strong policy and organizational base detailed enough to facilitate action and flexible enough to accommodate unusual situations.

The national plan provides a framework for action by dividing the broad universe of agricultural literature into smaller, more manageable pieces. A key player is NAL, which has assumed responsibility for the preservation of Federal documents in print. It seemed worthwhile for the conference participants, including NAL, to consider if it were practical to extend the responsibility of preservation of digital information to one central organization, or if the responsibility needed to be distributed over numerous institutions, possibly making the process more manageable.

The Sharpshooter

Experience with the USAIN national preservation plan also led the Planning Committee to agree to hire a consultant to prepare a digital action plan. Beyond the fact that preparing the plan would be extremely complex, the credibility of the plan author would be a crucial factor when the document was distributed for peer review within the USDA, USAIN, professional societies and other bodies.

We were pleased to have Paul F. Uhlir agree to work with us. Paul, a lawyer and experienced staff member of the National Research Council of the National Academy of Sciences, recently coordinated a national panel of experts associated with the earth sciences data and edited the final report. Paul advised the Planning Committee on many topics as the planning process developed, and later served as Conference Facilitator.

Conclusion

As you can see, planning for the Conference required coordinating many issues. In the end we had a successful meeting and established the foundation for a digital preservation plan. The following two speakers, Evelyn Frangakis and Paul Uhlir, will describe these to you in more detail.

Resources

Preserving Digital Information: Report of the Task Force on Archiving of Digital Information Commission on Preservation and Access, Research Library Group
Principal authors: Donald Waters, Yale University, John Garrett, CyberVillages Corp.
http://lyra.rig.org/ArchTF/tfadi.index.htm

National Preservation Plan for Agricultural Libraries
USAIN Advisory Panel on Preservation
Principal author: Nancy Gwinn, Smithsonian Institution

(Copies available from Gregory Lawrence)

Report on the Meeting USDA Digital Publications: Creating a Preservation Action Plan

Evelyn Frangakis
National Agricultural Library
Beltsville, MD

Given that a number of U.S. Department of Agriculture (USDA) agencies have begun publishing exclusively in electronic form, the National Agricultural Library) NAL and other key stakeholders and responsible parties believe it is essential to develop a preservation plan for digital USDA publications as soon as possible. Such a plan will need to be developed together with the Department's Chief Information Officer and key representatives of all USDA agencies, other responsible Federal Government entities, such as the Government Printing Office (GPO) and the National Archives and Records Administration (NARA), the land-grant university libraries, and other non-governmental institutions and groups in the agricultural community.

The NAL, with the Economic Research Service of the USDA (ERS), GPO, Cornell University, and the Farm Foundation, recently took the first step in a cooperative venture by convening a 2-day meeting, held March 3-4,1997 in Washington, DC, with representatives of many of the above groups to begin to identify the major elements and requirements of such a plan. Under the auspices of the NAL, the meeting was organized by Cornell University's Albert R. Mann Library. The meeting served as a call to action to develop a preservation strategy for USDA digital publications.

A number of key agencies were represented and provided support and input to the task at hand. Tom Kalil, Senior Director, White House National Economic Council, presented the keynote address and provided the broad administrative approach. He discussed research, technology, publication trends, and information policy matters. Kalil noted the cost-effectiveness of this digital technology on a life cycle basis.

Trends on the technology side include:

1. Storage costs are dropping dramatically.

2. Archiving of multimedia – what will we do with object-oriented databases?

3. The rate of technological change is enormous -- archiving of software and machine.

4. Archivists are interested in broader context of information as well as information – how is that preserved in a digital world? There are some technologies and standards that will make it easier to read digital information.

Some new directions in information policy noted include:

- The transfer to digital should be relatively easy (costs are decreasing rapidly).

- Agencies need to think about how information is generated to prepare for its management and preservation.

- The notion of going from hot lists to wish lists (People are taking the subject domain by looking at what's out there on the Internet. It would be better to have

domain experts look at what should be out there.)

- The movement toward communities of interest, which are based on shared motivation rather than geography. Communities of interest are often engaged in sharing information, communication, transactions (ex: BioNet -- includes different threaded news groups). They demonstrate increasing returns -- those communities that are large will get larger with time. Are they worth archiving? Could they be useful to historians in understanding how decisions were made? Who is responsible for archiving the information?

Anne Thomson Reed, Acting Chief Information Officer, Office of Information and Records Management (OIRM), discussed the need to manage information now in order to keep it for the future. She reiterated Abraham Lincoln's vision as he established the Department, "to acquire and diffuse among the people of the United States useful information on subjects connected with agriculture." To ensure this information would be there for future generations, Lincoln committed the Department to "acquiring and preserving all information concerning agriculture."

Catherine E. Woteki, Acting Under Secretary for Research, Education and Economics, noted that the ideas generated at the meeting will have long-reaching benefits for future researchers, analysts, educators, and the public in accessing the vast body of information produced by the USDA.

Pru Adler, Assistant Executive Director, Federal Relations and Information Policy, Association of Research Libraries, addressed "Issues and Challenges in the Long-Term Retention of Digital Publications." The key themes of her talk were:

1) the context for change--why new models are needed;

2) the need to build and develop new infrastructures for networked-based preservation and access activities; and

3) a call to initiate additional preservation programs and pilots.

Adler reported on efforts of the National Research Council and joint efforts of the Commission on Preservation and Access and the Research Libraries Group. She mentioned the following common themes:

- Preservation of information resources, especially digital format, merits additional focus and support;

- Archival and preservation responsibilities rest with the creator and/or owner and digital archives may act as fail-safe mechanisms to protect valuable information resources for future use;

- Adoption of the life-cycle concept - creation, access, maintenance, and preservation issues - should be addressed at the point of origin;

- The development of a decentralized system of archive centers;

- Development of these distribution centers or a federation is fundamentally different from current archival and preservation practices;

- Issues relating to standards, education, funding, and competing technologies are critical; and

- Pilot projects and programs will both explore and resolve some key issues and serve as a means to manage the transition to the digital, networked environment.

The land-grant perspective was offered by Sam Demas, meeting co-chair and head of collection development and preservation at the Albert Mann Library at Cornell University. Sam discussed the preservation arena and laid out premises on which the meeting was based.

Greg Lawrence, government information librarian at Cornell University, spoke about the measure of the challenge presented in preserving digital USDA information.

The day's first panel, on existing models for long-term retention of digital information, was moderated by project consultant Paul Uhlir and included:

- Hedy Rossmeissl, Senior Program Administrator for Data and Information Delivery, U.S. Geological Survey;

- Richard Davis, Data Administrator, National Climatic Data Center, National Oceanic and Atmospheric Administration (NOAA);

- Janet Vavra, Technical Director Inter-university Consortium for Political and Social Research (ICPSR); and

- Kurt Molholm, Administrator, Defense Technical Information Center.

Each of the panelists discussed in detail his or her agency's/organization's existing program for retaining digital information.

A second panel, composed of responsible parties and key stakeholders, included representatives from:

- the National Agricultural Library – Pamela Q.J. André, Director;

- the research community -- represented by Bruce Wiersma, Dean, College of Natural Resources, Forestry, and Agriculture, University of Maine;

- the Government Printing Office -- Wayne Kelley, Superintendent of Documents, and

- the National Archives and Records Administration -- Thomas Brown, Chief, Archival Services Branch, Center for Electronic Records.

NAL Director Pam André set the context for the panel by talking about NAL's mission, its progress to date in preservation efforts, and its challenge in preserving electronic formats. Bruce Wiersma provided the user research perspective, with examples from his own and graduate student's work.

Wayne Kelley, Superintendent of Documents, GPO, discussed the mission for the Federal Depository Library Program and the strategic plan for transition to a more electronic depository program. He also discussed a study on the assessment of agency plans and standards for creation and dissemination of electronic information products; depository program authority; and USDA publications in the depository program (current counts and digital future).

Tom Brown, Chief, Archival Services Branch, Center for Electronic Records, NARA, noted that over 1,000 automated information systems are creating and processing information of permanent value, including 29 automated information systems within USDA. NARA's strategic plan includes the commitment to develop and refine standards for a distributed system that allows physical custody of archival material, particularly, electronic records material, outside of its facilities when feasible. Part of the implementation of the plan is a dialogue with Federal agencies and NARA's constituents on a wide range of records management issues, which includes a complete review of NARA's guidance to agencies on electronic records.

At the end of the first day, Paul Uhlir led a plenary discussion of models and issues in digital records retention and provided participants with homework to prepare them for the task of the second day. The first day set the stage for work ahead by providing models and perspectives of responsible parties and key stakeholders. The second day was devoted to action. Participants were assigned to one of four breakout groups, which met all morning, to address a range of questions on a given issue in order to work toward drafting a preservation action plan. The following

elements of a plan were discussed in some detail:

- the management framework and related institutional roles and responsibilities, both inside the Department and externally, in the long-term preservation of digital USDA publications;

- the underlying technological infrastructure and technical document management requirements;

- the development of long-term retention criteria and processes for digital USDA publications; and

- the main issues in long-term user access to and retrieval of those digital publications.

The afternoon was devoted to breakout group report results and a plenary discussion of the elements of a national plan. Based on the results of this recent meeting, an initial preservation plan will be developed over the next few months for discussion within the Department. This preliminary plan will identify what needs to be done in the near term as well as over an extended period of time, the principal USDA agencies involved, and the resources required. It will serve as a discussion draft for obtaining commitment and support to proceed with this important initiative.

Project Consultant Paul Uhlir will now discuss the results of the conference.

Key Considerations in the Long-Term Retention of Digital Information

Paul F. Uhlir
National Academy of Sciences/National Research Council
Washington, DC

Introduction

My presentation will provide an overview of the key elements that need to be considered in developing and implementing a plan for the long-term retention of digital information. Some of these elements, of course, are the same as for paper documents. Others are similar or analogous, while others are unique.

I have organized the discussion according to four topical areas. The first is the development of retention and purging criteria and processes. The second involves technical document management issues. The third focuses on considerations of long-term user access and retrieval of public Government information. And the final area encompasses institutional roles and responsibilities, including financial aspects.

Because the preservation plan that is being developed by the U.S. Department of Agriculture USDA) is still very much in a preliminary draft form, I will not discuss the specific actions and recommendations in that project. Rather, I will provide a summary of the major elements that need to be considered in the development of any new program for the preservation of public digital documents, and will draw on examples from the USDA and other Government agency activities to illustrate my points.

Development of Retention and Purging Criteria and Processes

We begin with the questions what? and why? Certainly the threshold question in developing a preservation plan for digital documents is defining the universe of information that will be preserved, and providing a well-understood rationale for its preservation. The broad reasons for saving digital information are the same as for paper documents: it is their historical significance, the intellectual achievement they represent, and their potential social, cultural, or economic value. Of course, there are more specific reasons that are dependent on institutional context, the nature of the information product, and the anticipated end users. You all are familiar with the criteria for published literature—books, reports, articles, and the like—so let me focus briefly instead on retention criteria for electronic scientific data, which may be less familiar to you.

For example, there are significant differences in the need for long-term retention of experimental and observational data. Data from laboratory experiments in such areas as chemistry or materials science typically are reproducible, since the validity of any experiment depends on whether its results can be reproduced independently by other researchers. Thus, except perhaps in very large and expensive experiments, there is little need to keep the original, primary data once the results have been published and the experiment independently verified. Instead, the data that are of greatest long-term value are compilations of highly evaluated data that can be used repeatedly by other researchers as reliable reference points.

In the observational sciences, however, such as astronomy or environmental sciences, the research itself is dependent on the data

themselves, which can be processed and interpreted at different levels of complexity.[1] Typically, each level of processing adds value to the original, raw data by summarizing the original product, synthesizing a new data product, or providing some interpretation of the original data. The processing of data leads to an inherent paradox that might not be readily apparent. The original unprocessed, or minimally processed, data are usually the most difficult to understand or use by anyone other than the expert primary user. With every successive level of processing or interpretation, the data tend to become more understandable and better documented for the nonexpert, general user. One might therefore assume that it is the most highly processed or evaluated observational data that have the greatest value for long-term preservation, as in the case of the experimental laboratory sciences, because such data are more easily understood by a broad spectrum of potential end users. In fact, just the opposite is usually the case for observational data, because it is only with the original, unprocessed data that it will be possible to recreate all other levels of processed data and data products. Thus, while laboratory scientists value most highly the evaluated data compilations, researchers in the observational sciences typically want all reliable original observations to be saved, because most observations are unique and non-reproducible, and the original data can be used repeatedly and in different ways in future research.

This one example highlights not only some of the differences in developing preservation criteria for different types of information products, but also between paper and digital products. Digitally generated observational data pose a significant challenge in volume and in proper documentation and preparation, that are not inherent in data recorded on paper or even in most other digital information products. The situation is becoming increasingly complicated by the generation of hybrid, multimedia information that may include text, numerical data, animation, sound and video all in one product, and that furthermore may include self-executing

programs that will automatically update or revise that product over time.

The development of retention criteria for digital information is thus more complex and less straightforward than for paper publications, although some of the basic considerations will remain the same in both types of media.

Issues that might be considered in the long-term retention and life-cycle management of digital information products include:

- Legal restrictions
- Cost
- Documentation/metadata
- Quality control/quality assurance
- Provenance/authority/authentication, and
- Other context-specific issues

Legal restrictions include national security, privacy, and various intellectual property rights, similar to the paper paradigm. A potential significant difference may arise with regard to adequately sorting out intellectual property rights in hybrid digital information products which might integrate dozens or even hundreds of sources.

The costs arise from the labor required to evaluate and subsequently manage the digital information, as well from the technological infrastructure, as discussed later.

Documentation, also referred to as metadata, is especially important for scientific data and other esoteric information products that require some ancillary explanation to facilitate their use. Digital data that are so lacking in documentation that even an expert in the same discipline is unable to understand them are obvious candidates for the trash bin, unless their originator can be found and persuaded to make them intelligible. The physical separation of explanatory documentation from the data themselves should be avoided.

Quality control and assurance is another retention criterion that needs to be considered in whether to preserve an information product.

One method appropriate for both paper and digital information is peer review. In contrast to paper products, however, electronic information may become corrupted due to technical deterioration or anomaly, or through the intentional or accidental introduction of errors as a result of use. What makes the quality control even more difficult for electronic information is that sometimes the problems, such as viruses, are not readily apparent and may lie dormant until some future point.

Provenance and authentication have parallel importance for both paper and digital forms, but pose more problems in the electronic context. As in the case of quality control, the original and authentic version may be difficult to ascertain, and fraudulent or illegal modifications can be made that are difficult or impossible to detect.

Issues that might be considered in purging or deeper archiving of documents include:

• Age of document
• Physical condition
• Cost
• Use history, and again
• Other context-specific issues

The implementation procedures for retaining and purging documents are also likely to differ from the paper model. Digital information products are more voluminous, varied, and complex than their paper counterparts, and therefore require a broader range of expertise for their proper evaluation and become more labor intensive and costly to screen.

Technical Document Management Issues

A detailed discussion of the hardware and software requirements for long-term retention of digital publications is beyond the scope of this presentation, and of course in any event is largely determined by the technological infrastructure that is already in place. Certainly one bit of good advice is to spend the time to do thorough background research to find out what are the technical "best practices" for

long-term retention that can be derived from the experiences of other similar programs. Choosing the right technologies is a decision that should not be made lightly and there are many well-known horror stories. The acquisition or upgrading of the necessary information technologies is likely to be the single largest cost associated with the preservation of digital information, although many of those costs can be shared and integrated with the institution's overall information technology requirements. Indeed, it is essential that the preservation function--or, more accurately, the information life-cycle management considerations--be expressly included in the planning and procurement of information technologies for the entire institution.

There are several technical requirements or functions that are especially important to long-term preservation that should be mentioned here. Acceptable document formats and media for long-term retention need to be chosen in conjunction with the institution's information creators and information technologists. Costs can be reduced if the formats for both creating and preserving the information are the same, and interoperable technologies are used.

The transfer of all digital information products from old media to new media on a regularly scheduled basis is essential. There have been many instances of old tapes deteriorating and becoming unreadable, or of lacking equipment that can read the information stored on obsolete media. This is a non-trivial problem, as I'm sure you are all aware. How many different word processing programs have you used in the past 10 years just in the course of your daily office work, and how much information do you still have on 5 1/4 inch diskettes that you have not migrated onto 3 1/4 inch diskettes? Institutions that have several decades of large-scale experience in this, such as the NOAA National Data Centers, currently transfer the information on 10-year cycles. Related to this requirement is the need for providing physically separate back-up facilities and environmentally controlled storage

conditions for both the primary and the back-up locations.

Finally, system security protocols must be established that effectively balance the need for open systems that allow for easy user access against the need for security against accidental or intentional destruction of either the technology or the information itself.

Long-term User Access to and Retrieval of Public Digital Information

The next important issue area involves the planning and implementation of long-term user access to and retrieval of public digital information. As in the other topical areas there is a lot of overlap between paper and digital information, particularly with regard to legal and policy requirements that you all know better than I. I will focus instead on some of the key differences.

Undoubtedly, the most significant difference is the vastly expanded universe of users who are now able to access and retrieve information remotely. This is a true shift in paradigm from the paper model. Although it is true that only a small percent of the population has ready desk-top access to on-line information, that number will grow inexorably, and in fact, almost everyone can now go to a library or other Internet source and establish remote access. Thus the focus of planning for providing access to the information and related user services needs to shift from perhaps dozens of on-site clients using the stacks to thousands of remote clients on a daily basis.

The following guidelines are useful to adopt, consistent with the need to maintain a customer orientation:

- Provide equitable access and retrieval services to all potential users;

- Minimize technical, regulatory, and cost barriers to access and retrieval;

- Make the information as easy to find and use as possible, while protecting

confidential or proprietary information, and

- Establish a means for users to provide input and for your organization to respond to that input.

Starting with this last guideline first, one of the most difficult tasks is to be responsive to the vastly enlarged body of end users in the networked environment, particularly when you first provide on-line access. One mistake is to assume that the distribution of categories of end users will remain the same as with those who physically visited your facility. While you can be reasonably certain that your on-site visitors have a very specific objective and information need in coming to your facility, your on-line visitors are much more likely to be more diffuse and less focused than individuals who have to make a substantial commitment in time and perhaps expense in making their trip to you. Also, the demographics will change, with an obvious emphasis on those user groups who have ready access to the Internet. Although it may be difficult to anticipate at the outset what the primary on-line user requirements and interests may be, the good news is that you can easily track the types of users electronically and develop a customer distribution profile quite quickly.

One absolute necessity, whether the information products are all available on-line or not, is a comprehensive on-line directory or catalog, preferably in some multi-level format that will bring the user from the general to the specific. This service, although time consuming and expensive to develop, is invaluable to fully realizing the information transfer potential.

Another important piece of advice is to use a proven professional Web designer, rather than an in-house technologist. A seasoned expert will be sure to cover all the essential features–and many you may not even think of by yourself–in working with you to optimize your Web site for your needs.

One feature that ought to be included is a means for customers to provide feedback and useful suggestions. In addition, it may be important to appoint an advisory body of knowledgeable representatives from major end user groups. Such a formal advisory mechanism can be helpful not only with successfully maintaining a customer orientation, but in providing advice on major decision points such as the development of retention and purging criteria.

Institutional Responsibilities and Relationships

Finally, there are the various organizational roles, responsibilities, and relationships that need to be worked out. Again, many of these will be similar, or at least build upon, the organizational models used in the paper paradigm. Within a large Federal department or agency, there are many internal institutional links that need to be established and responsibilities agreed upon. Under current Federal law, the principal information policy and planning function resides in the Office of the Chief Information Officer. However, the lead entity for developing and implementing a preservation plan within each Federal organization will likely vary. In the Department of Agriculture, for example, the logical focal point is the National Agricultural Library. In addition, the successful implementation of a preservation plan is dependent on the active participation of the information creators throughout the entire institution and even outside it, to the extent that the institution preserves information products that are created by contractors or grantees. All of these parties need to be involved in the planning process and claim some ownership to its results in order to make it work.

Of course, there are some essential external responsibilities and relationships that need to be considered. Governmental organizations outside a Federal department such as the USDA that have an important role in the preservation and dissemination of public digital information include the National Archives and Records Administration, the Government Printing Office and its Federal Depository Library Program, the National Technical Information Service, and various other Federal and State Government institutions. Among the nongovernmental entities that have an important function vis-a-vis the Department of Agriculture are the land-grant university libraries, and the aforementioned user groups and contractors and grantees.

A key difference between the paper and digital organizational considerations is that the electronic networked environment allows for a more highly distributed system with specialized functions, without having to physically locate all documents that need to be preserved in a centralized repository. Indeed, the physical location of digital information can be completely transparent to the end user, allowing for more flexible and responsive organizational structures that are optimized for function and cost. The challenge for the Department of Agriculture now is to create a management structure that will take advantage of these distributed attributes both internally and externally, while maintaining just enough authority and control to realize all its important objectives and requirements.

This brings me to the last issue, the unavoidable financial aspects. The good news is that a carefully designed and implemented preservation plan that takes advantage of broadly distributed functions can minimize the need for additional funding and spread the costs across a large number of organizations. The bad news is that it will not come without a price, and that new funds will have to be found in an era of reduced Federal funding. Because of the public good nature of this activity, the preferred option would be to seek an augmentation to the annual appropriations. In the event that direct appropriations or reprogramming of funds cannot cover the full costs, it may be necessary to charge user fees for certain products or services. In that case, some level of basic access should be kept free if at all possible.

1. National Research Council (1995), Preserving Scientific Data on Our Physical Universe: A New Strategy for Archiving Our Nation's Scientific Information Resources, National Academy Press, Washington, DC.

The views expressed in this presentation are those of the author and do not necessarily represent those of the National Academy of Sciences or the National Research Council.

Bureau of the Census Update

John C. Kavaliunas
Bureau of the Census
Washington, DC

It's a pleasure to address this audience once again and tell you about some new developments at the Census Bureau. We at the Bureau are well aware of the vital link that libraries, particularly the government documents librarians, play in disseminating and explaining Census Bureau information to the public.

Before I tell you about future plans, let me preface my remarks with three general observations about data dissemination directions at the Census Bureau: Internet, fees, and future access. All three of these are very much intertwined.

Observation 1: Internet

Internet usage continues to grow, offering opportunities to reach a much wider audience than ever before. The Census Bureau, early on, saw the potential of the Internet and we are actively moving towards our goal of making the Internet a primary means of disseminating our information.

- Currently we are receiving more than 2 million "hits" per week.

- We have been on the top ten list of government sites for the last 3 years, and next to White House, probably the second most visited Federal site.

- Several report series, such as the Current Industrial Reports and the Population Estimates and Projections, are available primarily on the Internet. In March of this year we stopped printing our foreign trade reports in paper, the FT 925 series, and published the information on the Internet.

- We've also begun to make some changes--technical upgrades in some cases--to our products and begun to integrate across the various media. Let me give you two examples:

   The new 1996 Statistical Abstract on CD-ROM is Internet-compatible so that users can go back and forth from the CD to the census tables on the World Wide Web with a click of the mouse.

   Some topical reports in the P-series— Foreign Born Population, Geographic Mobility, for example—will be in print one year with updated tables on the Internet the following year.

We are also grappling internally with many of the same issues that are facing the library community: How do we strike a balance between print and electronic media, timeliness and archivability, and so forth. We are aware of these issues and will continue to work with you, with the Government Printing Office (GPO), and with other organizations to develop solutions that benefit the user.

But the point I want to make is that Internet has changed and will continue to substantially change the way we disseminate data.

Observation 2: Fees

What makes the Internet so attractive is that users have a virtual library at their desks. And, for the most part, it's available to anyone for free. But a concurrent development, and one that is at odds with the culture of the information highway, is that the Census Bureau, like other agencies, has been asked by

Congress and the Administration to supplement budgets through user fees and from the sale of products.

Last month we began a subscription service, CenStats. CenStats is a cautious step forward for the Census Bureau in recouping additional revenues through the sale of our products. Just about all the information and features currently available on our Internet site will remain there for free, as well as similar types of information in the future. However, CenStats will provide additional enhanced access that will make it easier or more convenient for the user. Initial offerings include:

- A geocoding application–that is, the ability to code online street addresses to census tracts.

- Additional look-up capabilities for detailed information by product code for imports and exports from the FT 925 series.

- Access to several of our CD-ROM products including USA Counties, County Business Patterns and Zip Business Patterns.

Future developments planned at this time include access to historical data bases of both demographic and business data.

We are working with the Government Printing Office to provide access to the CenStats for Federal depository libraries. This free access will not be limited to a single machine, but it will be limited to the single physical location of the library.

Observation 3: Future Access

Given the availability of the Internet, shrinking budgets, and user needs, we believe we are heading in the right direction in planning for an Internet-accessible data delivery system that will enable users to customize the information they need. We are developing a system known as DADS. This Data Access and Dissemination System will provide interactive electronic access to prepackaged data tabulations, data documentation, and online

help, as well as allow users to build their own tabulations from the census records. We currently have a prototype available and have been working with the Federal Depository Library Program, the American Library Association, the Special Libraries Association and other representatives of the library community to define and beta test this initial version of the system. Eventually the various search and access features of our Internet site will merge to provide seamless access to Census data.

With this as background, let me tell you about some major activities–economic and decennial censuses, as well as some new products, just released or on the horizon.

1997 Economic Censuses

The next major data collection effort will begin in early 1998, that is the 1997 Economic Census.

The 1997 Economic Census will be the first census to report economic data by North American Industrial Classification Code (NAICS), a joint U.S.-Canada-Mexico system that replaces the old Standard Industrial Classification (SIC) code based on a 1930's manufacturing economy. There are 20 NAICS sectors, as opposed to the 11 SIC divisions. For example, many new service categories such as information and health have been added. The "information sector" covers 34 industries: Software and database publishing, on-line retrieval services; Satellite, cellular and pager communications; Motion picture, video and sound recording; and Radio, television, and cable broadcasting.

The old "services division" has been divided into 8 new sectors with 154 new industries recognized. The new sectors include Professional, scientific and technical services; Health care and social assistance, including HMOs; Administrative and support, waste management and remediation services, which include telephone answering services, telemarketing, etc.; and Arts, entertainment, and recreation.

A Federal Register notice appeared earlier this month, and a NAICS manual is scheduled for release by the Office of Management and Budget this fall. If you need more information on NAICS, look behind the economic indicators clock on our Internet home page.

The first release of data from this census will be a new report that combines data from all sectors. We are looking to release this report within a year of the census—that is, early 1999.

But, in general, you can expect fewer printed reports from the 1997 Economic Census; in fact, about 75 percent fewer printed reports, but more data on CD-ROM, especially in PDF format.

For more information on the census plans, see "Looking Forward to the 1997 Economic Census" on our Web site. There you will find sample forms for all the censuses, publicity materials, etc. Reference materials, such as what used to be available in the Guide to the Economic Censuses, will be available on the Internet.

You should also note that responsibility for the Census of Agriculture, usually taken in conjunction with the Economic Census, has been shifted to the U.S. Department of Agriculture.

Census 2000

Let me update you on plans for the next census.

In April, as required by law, we presented to Congress the topics that we propose to put on the questionnaire.

- In response to Congress's wanting to reduce the reporting burden, we are proposing the shortest short form in 180 years. We are proposing six population and one housing question: name, age, sex, relationship, race, Hispanic origin and whether you own or rent your home. 1990 short form questions -- marital status,

units in structure, value/rent, and number of rooms -- will become sample items.

- There is one new subject proposed for the long form–grandparents as caregivers–as required by the welfare reform act. Five subjects will be dropped: children ever born (fertility), year last worked, source of water, sewage disposal, and condominium status.

It should be noted that Congress has given no indication that it supports a long form in 2000.

Next spring we will present to Congress the actual questions that should appear on the questionnaire.

There is an Interagency committee looking into a redo of OMB Directive 15, that is, how race/ethnicity are reported, particularly as regards the 2000 census questionnaire. Under consideration are the following 3 options: including a multi-racial question to the census questionnaire; allowing people to check as many racial categories as they require, rather than just 1; and lastly, combining race/ethnicity and ancestry into one question. The committee's recommendation is due this summer, followed by a public comment period and the issuance of a directive in October.

Regarding decennial census products, they are yet to be defined, but I can tell you a few things: we plan to produce printed reports from the census, CD-ROMs, and other electronic data sets or predefined tables that can be accessed through the Internet. I can also tell you there will be fewer printed reports, CD-ROMs, and even predefined tables than there were in 1990. But users will have the ability to specify and tailor tabulations through the Data Access and Dissemination System (DADS) that I mentioned earlier.

Other New Products

Zip Business Patterns - A new standard product offered for the first time this fall, Zip Business Patterns will be an annual release. Like its companion product, County Business Patterns,

it provides information on the number of establishments and employees by SIC code, but for areas smaller than a county.

Statistical Abstract - The 1996 CD-ROM is available. Several different file formats are available on the disc to help you access the information you need. There are also links from the CD-ROM directly to the appropriate pages on our Internet site.

Landview III - Scheduled for release in early fall, the new Landview product, which combines mapping software with Census Bureau data, will be Windows compatible, with updated geography, and with additional software features that will make it easier to run and to import your own data. Look for information on the TIGER pages of our Internet site.

In Conclusion:

To sum up, let me reiterate:
• The Census Bureau is relying on the Internet as a dissemination medium, particularly as we move towards the 1997 Economic Census, the Data Access and Dissemination System, and Census 2000.

• Our products are changing to take advantage of the capabilities offered by the Internet.

• We are making a cautious first step to recover additional revenues through a subscription service that will provide enhanced access to data.

• Lastly, we will continue to work with GPO and the library community to develop solutions to some of the unresolved issues that we are facing together.

Agency Update: the Small Business Administration

John Ward
Small Business Administration
Washington, DC

Compared to the larger Federal agencies that are engaged in publishing research and statistics, the Small Business Administration (SBA) is something of a poor relation: It's a small agency (some 4,513 employees nationwide, compared to some 34,228 employed by an organization such as the Commerce Department), it is relatively new (it only came into existence in 1953), and its publication function is somewhat limited, since its primary focus is on program delivery (issuing loan guarantees, administering procurement assistance programs, running a disaster loan program, etc.), rather than publishing statistics or research.

About the SBA

The Small Business Administration is engaged primarily in writing loan guarantees issued by bank lenders to small businesses, in administering a disaster assistance program, and in offering counseling and technical assistance to small businesses. It delivers its services through a network of some 84 SBA field offices, as well as through Business Information Centers (BICs), and One-Stop Capital Shops.

It also delivers counseling and assistance through some "resource partners," such as the Service Corps of Retired Executives (SCORE), a network of over 400 chapters staffed by some 12,400 volunteers, and through over 900 Small Business Development Centers (SBDCs), a business assistance effort co-funded by the SBA and state governments.

Getting Information about the SBA

The simplest way of getting basic information about the Small Business Administration--from office locations and telephone numbers to the text of many information pamphlets--is by consulting its home page on the World Wide Web at < ttp://www.sbaonline.sba.gov > . Basic information is also available to the public from the Small Business Answer Desk (800-827-5722), a toll-free information line that is accessible 24 hours a day.

Another valuable information resource is the U.S. Business Advisor, a one-stop electronic link to all the business information and services that the Federal Government provides. It is located at < http://www.business.gov > .

SBA Publications

Broadly speaking, the SBA publishes two types of materials. The first type, "general" publications, consisting primarily of pamphlets and other ephemera, are intended as brief guides to the agency's services and programs.

The second type of published material consists of publications that are of a more technical nature. They include:

- statistical publications;
- research reports;
- legal and administrative publications, and
- official reports required by law.

The first group of materials will probably continue to be printed and disseminated in the

same manner in which they have in the past: that is, they will be print products produced through the Government Printing Office (GPO) (thereby making their way to depository libraries in the traditional way) and distributed to SBA field offices and the public at no charge. Some of them—a group of publications consisting of the old "management aids" series--are offered for sale through an SBA sales outlet in Denver, and will continue to be distributed that way.[1] The only change that is occurring with this group of publications at the present time is that the information contained in some of them is now being posted to the SBA's site on the World Wide Web.

The second group of publications—the technical and research publications—contains those that are probably of most interest to document and reference librarians, and will be the focus of this update. They are also the group of publications most likely to go "fugitive"—that is, public documents that are unrecorded, uncataloged, not distributed to depository libraries, and therefore unavailable to the public—in the face of budget cut-backs and rapidly evolving technology.

It is to avoid this problem of fugitive documents that the SBA recently undertook a number of steps to ensure that its publications are cataloged and made available to depository libraries and the public.

Core Technical and Research Publications

The most basic of the SBA's technical and research publications—its "core" publications—include:

- Annual reports, including the SBA's annual report, the annual report of the Small Business Innovation Research (SBIR) program, the annual report of the chief financial officer, and other such reports;

- Economic and statistical reports, such as The State of Small Business: A Report of the President (an annual economic report that is similar to the Economic Report of the President), the Handbook of Small

Business Data (a periodically revised collection of statistical data), and the Small Business Answer Card;

- Research finding aids, such as the Catalog of Small Business Research (a bibliographic guide to the SBA's funded research reports that are available from the National Technical Information Service); and

- Certain legally mandated reports, such as special reports to Congress, the quarterly report of the inspector general, and the quarterly SBIR solicitation announcements.

Another, ancillary group of technical publications includes:

- Administrative documents, such as the SBA's standard operating procedures (SOPs), regulations, and industry size standards;

- Legal documents, such as the Legislation Handbook and the Opinion Digest; and

- Public affairs documents, such as press releases.

Most of these items have, in the past, been print products that were produced and made available to the public in the traditional manner: that is, they were printed at GPO and then either given away upon request or sold through the Superintendent of Documents' sales program.

Over the past several years, a number of factors have conspired to change the document production and delivery process at the SBA. Some (or even most) of these developments are common to other Government agencies and include reduced staffing, budget cut-backs, program recisions, etc.

Other factors are more technology driven, such as the implementation of desktop publishing systems, the increasing cost-effectiveness of short-run, in-house printing equipment (such as Xerox's Docutech system),

and the ability to release publications in an electronic format (through the Internet, on CD-ROM, on diskette, etc.).

This scenario will be familiar to anyone who has had to deal with Federal publications in the past few years.

Improving Access to Documents

For documents that are falling off the traditional path to publication and dissemination, what is being done at the SBA? A number of steps, some of them tentative, others quite definite, have been taken recently.

Identification of Fugitive Documents

One of the first steps the SBA has taken was to identify documents that make up its core documents group. Among other things, this task entailed making up a list of documents that have either never, or only sporadically, been printed through GPO, and therefore may not have entered into the bibliographic record.

Establishment of Closer Ties with the Superintendent of Documents

The old, automatic system of document cataloging and delivery to depository libraries that presumed all printing was done by GPO had clearly begun to break down with the turn to in-house duplication in the mid-1990s. In September 1996, officials of both the Library Programs Service of the Superintendent of Documents and the SBA met to discuss ways of better insuring that the agency's documents were sent to the Superintendent of Documents for cataloging and distribution to depository libraries. This initiative has already brought into the bibliographic stream several SBA publications that might have ended up as fugitive documents.

Bibliographic Control of Serial Titles

Occasionally, some SBA serial titles were either never printed, never truly disseminated outside of a small group, never cataloged, or never assigned ISSNs. Searches conducted on

OCLC and at the Library of Congress confirmed the existence of this problem. The agency has begun to rectify this situation by working with the National Serials Data Program to get ISSNs assigned to its serial titles, encouraging program offices to identify and number their documents consistently (and include the ISSN), and to divert copies that are duplicated in-house to the Superintendent of Documents for depository library distribution.

Creation of GILS Records

While the Government Information Locator Service (GILS) may have been intended for something other than bibliographic control, its usefulness in this regard cannot be overstated. If nothing else, it creates a bureaucratic imperative to recognize that certain documents need to be published and made available to the public (unfortunately, the two are not always the same thing in the Federal Government!).

The SBA's GILS site is posted to the World Wide Web at < http://www.sbaonline.sba.gov/gils/ >. The GILS site is an important one to check for SBA information, both print and electronic. For the first time, a nearly comprehensive list of the SBA's publications and information products is available in one place, together with information on public access.

The Specifics: A Look at Some SBA Publications

What is happening right now with some key SBA publications? Here is a look at the present state of a few titles, to better highlight some trends in the SBA's approaches to document production and dissemination.

The State of Small Business: A Report of the President

The State of Small Business (ISSN 0735-1437) is an annual economic report on small business that is written by economists and statisticians in the SBA's Office of Advocacy. It has been, and will continue to be for the

immediate future, a print product. Some of the data contained in the some 50 tables that make up the appendices of the book are making their way to the SBA's Web site.

Small Business Profiles

Small Business Profiles (ISSN 1066-646X) is a collection of basic business statistics organized on a state-by-state basis. With the 1996 edition, it has been discontinued as a print product. Instead, it has been posted to the SBA's Web site at <http://www.sbaonline.sba.gov/ADVO/stats/1996/> as an ASCII text file. Budget and staff cutbacks make it unlikely that this publication will return as a print product.

Opinion Digest

A collection of digests of legal opinions, Opinion Digest (ISSN 1092-2628) for many years was printed by the Government Printing Office (GPO) and sold by the Superintendent of Documents. When the Opinion Digest was dropped from the GPO sales program in 1995, the SBA was faced with a dilemma as to how best to distribute it. Since the back file (dating to the agency's beginnings in 1953) was not available in digital form, a decision was made to make the entire collection, along with a comprehensive index (five volumes containing 153 issues), available on microfiche through the National Technical Information Service. Future issues will be made available to the public through NTIS, be distributed to depository libraries (even if they are duplicated in-house instead of being printed), and may eventually be posted as text files to the SBA's Web site.

SBA Annual Report

The most recently issued edition of the SBA's Annual Report (ISSN 0083-3274), covering fiscal year 1994, was reproduced in-house on a Xerox Docutech system, instead of being sent through GPO for printing. This brought savings for the SBA, but left the two-volume report a likely fugitive document, since initially no plans were made to provide the Federal

Depository Library Program with copies, and public dissemination was minimal. In an effort to avoid this situation, copies of the Annual Report were provided to the Superintendent of Documents for dissemination to the depository libraries and to the National Technical Information Service, for public availability and as an archival, "print-on-demand" resource. Future issues of this document will probably be handled in a similar manner.

Small Business Lending in the United States

In certain ways, a three-year-old publication of the SBA, entitled Small Business Lending in the United States, points the way toward how certain kinds of technical information, particularly statistical information, will be distributed by the SBA in the future. The primary medium of this study of bank lending to small businesses is via the agency's Web site at <http://www.sba.gov/ADVO/stats/>. A print version was given limited distribution, as well as a diskette version. Both versions are made available to the public by the National Technical Information Service.

What the Future Holds for SBA Publishing

Unfortunately, a clear path for publishing SBA materials is not evident today: there is no single medium that could possibly satisfy the universe of users that a printed product, such as a book, does so well.

As can be readily noted from the narrative above, the SBA's publication effort dips its toes in a variety of formats: from traditional print, to short-run xerographic processes, to html postings on Web sites, to Adobe Acrobat (PDF) documents, to microfiche. None of these options is an ideal format for all audiences, but some formats are perfectly suited to the specialized audiences they attempt to reach.

For the near-term future, there are a number of publication trends that can be identified. There will likely be:

- Continued, though sometimes limited, print availability of major SBA titles;

- Growing electronic availability, especially via the Internet, of SBA publications and resources (though not, as yet, in any consistent format, whether html, ASCII text, PDF, etc.);

- Selected availability to the public of print products for sale, subject to the decisions of GPO's sales program; and

- Continued availability of the SBA's back file of major documents through NTIS.

Government document librarians will probably have mixed feelings about the scenario presented in this update. The competing demands of a technologically sophisticated public for fast dissemination, of pinched budgets for cheap solutions, and archivists and librarians for durable, accessible information make an ideal solution difficult.

Because technological change has come so fast to technical publishing as practiced by the Federal Government, it is not only difficult to keep abreast of current developments, but almost impossible to judge which medium, which technology, and which software standard will ultimately prove to be the wisest choice. Unfortunately, the hindsight we will have gained some twenty or so years from now will be the only way we can obtain an answer to this publishing dilemma.

1. This group of documents is listed in SBA form 115C, Resource Directory for Small Business Management. The text of the directory is also posted to the agency's Web site at:

   http://www.sbaonline.sba.gov/gopher/
   Business-Development/resource.txt

Patent Products on CD-ROM

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The United States patent database is the largest cross-referenced body of technical information in the world, with more than six million US patents granted as of April, 1997. As part of the examination process these patents are assigned to one or more of more than 144,000 classification numbers, which groups that invention with all others containing similar technical features.

The United States Patent and Trademark Office (USPTO) publishes electronic information on CD-ROM in the Cassis series, which is now available for selection by Federal depository libraries through the Government Printing Office (GPO). The Cassis series includes the following patents CD-ROMs:

Patents BIB: Selected Bibliographic Information from US Patents Issued 1969 to Present

Patents CLASS: Current Classifications of US Patents Issued 1790 to Present

Patents ASSIGN: US Patent Assignments Recorded at the USPTO August 1980 to Present

Patents ASSIST: Full Text of Patent Search Tools

Patents SNAP: Serial Numbers for Allowed (Granted) Patents

and the following trademark CD-ROMs:

Trademarks REGISTERED: Bibliographic Information from Active, Registered Trademarks

Trademarks PENDING: Bibliographic Information from Pending US Trademarks

Trademarks ASSIGN: US Trademark Assignments Recorded at the USPTO 1955 to Present

Trademarks ASSIST: Full Text of Trademark Search Tools

Federal depository libraries may also select the Cassis USAPat series, which contains facsimile images of US patents from 1994 to the present. An "image" is an actual page of the patent, including all drawings, and looks just like the original printed document. USAPat is a document delivery system, not a search system. Retrieval is only by patent number.

General Cautions:

Each Cassis disc must be installed before being used for the first time; use PTDL installation defaults.

Be aware of the scope of your database and the limitations of your search. Encourage your patrons to supplement their Cassis searches with those in other online or Web-based databases, such as the first-page database accessible from the USPTO home page < http://www.uspto.gov > .

To do a serious patent search means searching by classification numbers after checking the Manual of Classification and the Classification Definitions on CD-ROM or in paper format. A keyword search can never be exhaustive, because there is no controlled vocabulary.

Be careful when searching by company names: official company names are often different from their popular name, and the USPTO does not standardize them upon entry into its database.

For further training on these products, it is strongly suggested that depository librarians contact their closest Patent and Trademark Depository Library (PTDL). Each PTDL has an official librarian liaison to the PTDL Program Office who has been trained through annual programs at the USPTO, and would be able to help address your needs. You can obtain a current list of PTDLs directly from the USPTO home page <http://www.uspto.gov>.

For technical questions regarding the use of USPTO's Cassis series or USAPat, please call (703) 306-2600. This number will not answer search strategy questions nor provide subject matter instruction. It is only for technical support on the use of CD-ROM products.

Library patrons may use the USPTO's automated message system at (800) PTO-9199 to obtain general information on the most frequently asked questions about patents and trademarks, seven days a week, 24 hours a day. Callers may also request a number of USPTO publications by leaving their name and address on the message system.

———————————————

Dave Morrison came to the Patent and Trademark Depository Library Program (PTDLP) office as the thirteenth Patent Fellowship Librarian in October 1996. Dave has been documents librarian and patents and trademarks specialist in the Marriott Library at the University of Utah since January 1987.

Tell Someone Who Cares: Creating Opportunities to Inform the World (Outside of Libraries) About Government Documents

Robert A. Hinton
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Indianapolis, IN

Good afternoon. The setup of the room has changed a bit since I came in earlier (there were tables instead of the rows of chairs as we have now), so it is going to take me a few minutes to rearrange how we are going to operate. While I do, I'd suggest that you turn to your left, introduce yourself, then turn to your right and introduce yourself. It is important that you do this because you are going to be working together this afternoon.

When I woke up this morning several occurrences led me to the realization that this was not going to be the best of all possible time slots. First, my Left-Hander's Desk Calendar quote for today told me that "According to Islamic belief, everyone is given a book with the record of his or her life. If the book is placed in your right hand, you are blessed; if the book is placed in your left hand, you are damned." Being a natural born lefty, my immediate reaction was, "Damn." Next, I realized that today is the anniversary of the sinking of the Titanic. "Damn." It's tax day. "Damn." My time slot is after lunch, and those of you who aren't beginning to get drowsy from lunch are starting to mentally make dinner plans. And on top of all of that, I'm getting a year older in three days. I have to remember to thank Sheila for this "damned" time slot.

The title of this session is "Tell Someone Who Cares: Creating Opportunities to Tell the World (Outside of Libraries) About Government Documents."

Some of you are probably wondering why you should be here listening to Bob talk about this topic. You don't recall my having any notoriety for being the leading documents evangelist, the literature isn't flooded with Bob articles, and you have probably done as much or more than I have in the way of promoting Government documents. Why are you sitting there listening to me? One big reason is: I asked for it and you didn't. When I received the Administrative Notes issue that had the depository conference schedule listed in it, I noticed several sessions "TBA," "TBA," "TBA," "TBA." My first thought was that this person TBA was damned prolific. But being curious I called Sheila McGarr and asked her what was going on with those slots. Sheila informed me that they all had someone tentatively assigned, but not confirmed yet, and someone might drop out. I took this as an opportunity, pitched my idea at Sheila, she thought the idea had merit and fit with the conference theme. I asked to be considered as designated hitter if someone did drop out. Someone did drop out, Sheila sent me e-mail stating that I was now "in the batter's box," here I am and there you are. And we have our first example of creating an opportunity instead of waiting for it to fall into your lap. Instead of reading TBA as "to be announced" read it as "To Be Asked (For)."

As I mentioned earlier, I am not an expert on this topic, but I was interested enough in it, and willing to go out and do some reconnoitering for you. I am bringing in experiences I've had, results of an informal

survey, and news of what our colleagues are doing. I am not the expert, but collectively we are, and that is what we are going to discover together today.

Part of what we are talking about is changing your mind-set. I need two volunteers. If the two of you would stand? This is the type of mind set we need to encourage. They didn't know what I was going to ask of them, had no idea what was coming, but were willing to take a chance. To try something different. To take a risk. Would everyone please give our volunteers a hand to thank them.

There is an expression you may be familiar with, one used to indicate an inordinate degree of difficulty or impossibility of some activity. It begins "It would take an act of Congress to..." If you would open the envelopes I distributed to some of you, you will find slip laws that we documents librarians are all familiar with: acts of Congress. We realize that an act of Congress isn't that difficult to come by. Neither is it impossible to create opportunities to speak or publish outside of library land.

On the Post-it notes I distributed I want everyone to write down a reason you can't or haven't spoken to disciplines outside of librarianship or tried to publish in the literature of disciplines outside of librarianship. As you finish and I move among you, I want you to crumple the note, and throw it into my bag. You now no longer have that as an excuse to hold you back. It is a mind set you have left behind.

Together we are going to realize how to create/take advantage of opportunities to speak and publish outside of librarianship. I am going to provide seed examples of what I and others have done, and in groups we are going to raise a crop of ideas.

I have informally surveyed faculty and administrators in various disciplines. The first question I asked them was if librarians had ever given presentations at the conferences

they attend, or published in the literature of their field. Overwhelmingly the answer was no. The next question I asked was, "What would your response or that of your colleagues be to librarians who spoke at your conferences or published in your literature?" The response this time was that there would not be a problem, and librarians would be welcomed if:

1. there were clear indications of how the information presented would affect them (how they do research, when they do research, where they do research);

2. the talk/article were relevant to the field (or focus of the conference);

3. the information/topic was timely;

4. the information/topic engendered new approaches, and

5. they were shown what they have to gain by attending the session, or reading the article.

Other comments were that librarian presentations would be more appropriate at the larger conferences with multiple topic areas - the smaller conferences tend to be more focused or work-oriented. Also that the approach or attitude taken needs to be not "I know more than you," but "Here is how I can help you," "This is what is happening in my field that can impact yours," "You may not be aware of..."

Admittedly this was a small sample, and not a scientific survey. But it is encouraging, and points to an opportunity for someone out there (this is a hint, people) to do the formal, scientific survey and write the paper, and make the presentation both within and without the library world.

In the past year I have made several presentations on Government documents to diverse groups:

For the Indiana Teachers of Writing conference I collaborated with an English faculty member on a presentation called "A Federal Case: Using Government Documents to Teach Research Writing." The faculty member (Dr. Nadene A. Keene, Indiana University Kokomo) was faced with writing textbooks that had skimpy information on Government documents (if they had any information on Government documents at all), sometimes incorrect information on Government documents, and students with the perennial excuse "I can't find any information on my topic." Dr. Keene outlined the problems, presented her syllabus and the topics chosen by the students. I described the Federal Depository Library Program, explained some of the access tools to Government documents, and showed how Government documents had quality resources (acceptable by the faculty member) for every topic chosen by the students.

Through my work as liaison to the School of Public and Environmental Affairs I discovered from a faculty member (Dr. Robert Lehnen, IUPUI) that members of an association he belonged to, the American Statistical Association, a) were not familiar with the depository program and b) had an upcoming Joint Statistical Meeting conference with a special session on Electronic Dissemination of Statistical Information. I took advantage of the "insider" information and submitted a proposal, "Electronic Dissemination of Government Information: GPO and the Federal Depository Program in Transition," and made the opportunity to inform an international audience of statisticians about the FDLP, the transition to electronic distribution of Federal statistical information, and implications for statisticians.

FOIIndiana is a group of journalists, citizens and citizen action groups in Indiana. For the 30th anniversary of the Freedom of Information Act they sponsored a "Your Right to Know" conference. I participated on their "Records and Cyberspace" panel, talking about and demonstrating Government information in electronic format that is available to citizens.

Other examples of the creative approaches documents librarians are taking:

- In Arizona: Docs Tour '97 (Some Things in Life are Free: Accessing Federal Government Information) is a program to help raise awareness regarding the knowledge and use of Federal depository information in libraries across Arizona. The Tour begins in February and ends in September, covering six cities (Yuma, Glendale, Tucson, Kingman, Flagstaff, and Apache Junction). The workshops are aimed at increasing awareness of existing Federal print and electronic resources, identifying and accessing Federal Government information sources, and locating information in the Federal depository libraries in Arizona. Librarians and educators knowledgeable in the area of Federal documents are teaming up to prepare and present these workshops. And just like a rock tour, they have produced tour t-shirts, which are being worn by a contingent from Arizona here in the front row.

- Anna Sylvan in Missouri attends meetings of the local chambers of commerce, business organizations, informing them about Government documents and making networking connections. She also conducts regularly scheduled bibliographic instruction sessions for the public, and announces them in the local newspaper.

- Tom Lindsey, University of Texas at Arlington, sends information about new Government documents of interest to local groups, such as documents on lowering cholesterol levels, and breast cancer to local jazzercise instructors.

- As Dawn Hammel, Creighton University puts it, "Sometimes you have to be sneaky when promoting documents." She ties documents to the curriculum, billing classes as "Political Science Resources on the Web" and "Economics Resources on the Web," garnering much better response

than when the class was listed as "Government Documents."

- Mary Freilich, University of Memphis, delivered a paper on using Web documents in the chemistry classroom to the American Chemical Society entitled "Freebies from the Feds."

- Beth Baur, University of Memphis, has targeted teacher groups during their inservice programs. She contacts them and offers them a different type of program idea than they normally have and has had great response. She has also addressed the Music Catalogers OCLC Users Group. After she had an article published in JGI, she was approached by Bowker-Saur to contribute a chapter to their new music information series. Establishing a track record, and getting your name out there can lead to other opportunities.

- Grace York, University of Michigan, has spoken extensively in the statistical community, partly because of her participation in the State Data Center Program: Inter-University Consortium for Political and Social Research, summer conferences, 1980, 1991, 1992. Southeast Michigan Census Council on Internet resources of statistics. Association of Public Data Users on how the Federal Government's move to electronics was affecting depositories. And she got New York Times coverage of her Congressional e-mail list.

- Eleanor Chase, University of Washington, advocates city manager, mayor, and attorney general conferences as targets of opportunity as well as local geographic information systems personnel.

- David Heisser wrote a report on efforts in New England to promote documents: David C. R. Heisser, Marketing U.S. Depository Libraries: Preliminary Report on a Public Awareness Campaign in New England," Government Publications Review 13 (1986): 55-65.

As you can see there are many different ways your colleagues are using to create opportunities to speak and publish outside library circles.

Now it is time for the group work I promised you. For the first few rows on this side of the room (group one) I have copies of calls for papers from the Chronicle of Higher Education Web site < http://www.chronicle.merit.edu/events/edead.html >, and a call for proposals for the Conference on College Composition and Communication. Your task is to identify as many ways as you can where Government documents and the Federal Depository Library Program can have an impact or would be appropriate for these publications or conferences.

Group two: here are copies of the chapters from the english textbooks I mentioned earlier that have poor or inaccurate information on Government documents. Your job is to identify the incorrect information, and decide how the sections on Government documents could be improved. Second, what ideas do you have for updating the information and how would you approach the publishers to get the material corrected and updated?

The third group is tasked with identifying people resources (state, local, national, or international) who could benefit from knowing about Government documents and the Federal Depository Library Program.

And last but not least group four. What organizations can you identify (state, local, national, or international) who could benefit from knowing about Government documents and the Federal Depository Library Program?

When working also think about what approaches or tactics you would use to state your case to these organizations or people.

All of the groups have fifteen minutes to work together. Then a spokesperson will report back to the group and we will put your responses up on the walls.

While you are working I'd like to share with you a fantasy I had in the shower this morning. It occurred to me that we are in the middle of National Library Week. Seven days when (theoretically) the nation is focused on libraries and library issues. And it hit me, Why isn't there a Depository Day? Can you imagine Sheila McGarr approaching ALA and asking for a Depository Day? "We aren't greedy. As depository librarians we are used to doing more with less. We just want '24 little hours,' and we can show what a difference Depository Day can make."

The results of the groups, and the information I presented earlier about what I and our colleagues have been doing proves that there are multiple opportunities to inform the world outside of library land about Government documents.

As group one reported, not one of the calls for presenters or calls for papers specifically mentioned libraries, Government documents, or the Federal Depository Library Program, but we were able to find in almost every instance, an opportunity for documents librarians to have an impact. We need to seek out the calls, read them, analyze them and employ the same critical thinking skills we tell patrons to use. And it is up to us to approach the issuers of the calls because they don't have us in mind when they put out the calls.

There are professional and academic associations that we can approach for presentations or publications: find out where and when they issue calls for participation. (Check conference proceedings, newsletters, journals, the Chronicle of Higher Education, talk to members of associations.)

There are textbooks with out-of-date, inaccurate or lacking information on Government documents.

There are individuals and organizations to network with.

As we have discovered together today, with initiative and creativity we can create opportunities to inform the world (outside of libraries) about Government documents.

James Brown, the Godfather of Soul, the hardest working man in show business, once sang, "I don't want nobody giving me nothing. Open up the door, I'll get it myself." Documents librarians are the hardest working librarians in library land. Today, together, we have opened up the door to informing the world outside of libraries about Government documents. Now go get it yourself.

"Federal Information Center, How May I Help You?" Or, "People Serving People"

Warren Snaider
General Services Administration
Washington, DC

1. Let's start with **what the Federal Information Center (FIC) is and why it was founded.**

The first FIC work site was set up in Atlanta in 1966 - that's over 30 years ago. The concept was simple: The FIC would be a traffic cop to assist callers to get to the right part of the right agency after just one call. This function would eliminate the public's having to call multiple offices and would allow agencies to handle only the calls they should receive. The program expanded over the years and now responds to about 2 million calls a year placed to a nationwide toll-free number, (800) 688-9889. The FIC is open from 9:00 a.m. to 8:00 p.m., eastern time, for live assistance. Recorded messages on frequently asked questions are available at all times.

The FIC responds to public inquiries about Federal agencies, program, and services. That sounds simple. Until you realize the breadth and depth of information required to respond to inquiries that may include:

- flood relief for a North Dakota urban dweller this month;

- disaster assistance for a North Dakota rancher who lost livestock during a blizzard last month;

- a no-charge telephone number for passport information (they do exist);

- which copyright form is used to protect a song (several possibilities);

- who to see about food stamps;

- how to obtain a replacement for a lost savings bond;

- how to complain about worker safety issues;

- how to get a job with the Federal Government, and

- a subject near and dear to our hearts: how to obtain a Government document.

This is of course just the smallest range I can mention. The real questions include, as any librarian knows, any imaginable subject.

2. So how does the staff go about trying to respond to all of these issues? One major way is to have a **computerized data base** with more than 100,000 points of contacts, with Government fact sheets, with the complete Catalog of Federal Domestic Assistance, and with other information about Federal programs. The data base, up to now, has been designed for internal use only. For the past little while we have been working with the Government Printing Office (GPO) to transfer this relational data base onto a CD-ROM. The disc will then be sent to the Government depository libraries and will be sold to the public through GPO's sales program. We have tested the disc at some local libraries (college and Government) and are about to receive what we hope will be the first version to be distributed. We want to update the public data base every quarter. (The live data base is updated daily.)

And there's more. We are also working with our sister program, the Government Information Xchange, to see about placing the FIC's data base on their Web site, <http://www.info.gov>. The FIC already refers Web users to specific sites or to the general search tool; the Web site will now refer Web users to a live person if they need assistance or information they can't obtain through their own search.

3. "So," you ask, "why have I never heard of you?" The principal way that **callers find out about the FIC** is through local telephone directories. We list the number in nearly 400 large-city directories (at least one in each State) all across the U.S. Is the FIC a well-kept secret in spite of that? Yes, it is. "Why is that?", you ask. Until funding allows for the call volume to increase, we have to place a cap on the number of calls. So we rely on other information professionals and on other Government offices to let more people know about us and expand the workload slowly. To that end, there are brochures and Rolodex® cards available for you to take back to your library and more are available by letting the FIC or me know.

By the way, nearly two thirds of our calls currently come from the States of California, Florida, Illinois, New York, and Texas. About two fifths of the calls come from the regional dialing areas of Atlanta, Chicago, Dallas, Houston, Los Angeles, Miami, New York, San Diego, San Francisco, and Tampa.

4. Let's also discuss some **minutia and other tidbits** for those who need or want to know such things:

- The average cost for a call is about $1.50.

- The FIC's budget is about $3.3 million and the major expenses are personnel and telecommunications.
- The FIC employs about 80 staff-years.

- The FIC has distributed copyright forms since 1975 and now distributes more forms

to individuals than the Copyright Office does.

- We are working with the Consumer Information Center to distribute their catalog more readily by having set up a separate toll-free '888' number for catalog calls.

- The FIC is the principal source of information on Federal per diem rates because of an agreement with another part of GSA.

- We also have an agreement with the U.S. Marshals Service and the Consumer Information Center to provide information on the Marshals program to sell property seized by Federal law enforcement agencies.

- Callers who speak only Spanish are directed to Spanish-speaking staff. Other languages are dealt with on an ad hoc basis.

5. Now, about **Government documents** specifically. What we try to do in the FIC is avoid a knee-jerk referral to a sales program, even though some documents are available only through GPO or NTIS. But some are available from the publishing agency for free. It certainly can't hurt to verify which approach is more valid in a specific case. If the real question is the use of the document, we also consider it fair to refer a caller to a library if we have verified that the document is available for public use at that library.

6. At this point, let me summarize what I think is the key point about the FIC: We offer people a chance to talk to **real, live people** about their inquiry. Yes, we have a choice of recordings that a caller must wend through. Yes, we are working to make information about the Government available to the public in other media like the Internet. But we know that some people are going to be confused no matter what we do. And others will have questions about new or changed programs that cannot be answered in a database that was

written before yesterday. We, like the public libraries, are a place for people to contact **people** who will help them with their concerns.

NASA Information for Government Depository Users

Dr. Roger D. Launius
National Aeronautics and Space Administration
Washington, DC

Overview

- NASA's Mandate of Information Dissemination

- Ongoing Publications Program

- New Information Technologies as Supplements

NASA's Mandate of Information Dissemination

- Space Act calls for NASA to "provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof"

- NASA strives for openness
    proactive approach
    no undue security regulations

- NASA employees have wide latitude to choose appropriate methods

NASA Publications Program

- Ongoing since agency founding

- Various formats

    Special Publications
    Technical Reports
    Contractor Reports
    Periodicals
    Monographs

- History publications are just one large component

Where to Find NASA Publications

- NASA Information Center

- NASA Printing Officer

- NASA Center for Aerospace Information (CASI)

- History Office

- Public Affairs Office

NASA's Use of New Information Technologies

- Electronic media supplement, not replace, printed word (OMB directive)

- Advantages

    Speed - updating, viewing
    Relatively cheap and easy to produce
    Many people outside NASA have access

- Caveats

    Equal access for all?
    Accountability

Variety of NASA Electronic Information

- World Wide Web

    History
    Spacelink (Educational Resource)
    Center for Aerospace Information (CASI)
    Headquarters, field centers
    Public affairs

Spaceflight, aeronautics

More NASA Electronic Media

- CD-ROM's

- E-mail listservs

  Press Releases
  Shuttle
  History

- Other

  NASA TV
  Videos

Summary

- NASA takes information dissemination very seriously

- Conventional publication program continues strongly

- NASA is also a leader in new electronic forms

National Criminal Justice Reference Service

Anne Hudson Bolin
National Criminal Justice Reference Service
Rockville, MD

Hi, I'm Anne Bolin with the National Criminal Justice Reference Service, or NCJRS. I wanted to begin with a couple of statistics that came out recently that really struck me.

What would you say are the chances that an American will go to prison during their lifetime? How about a 1 in 20 chance? That's according to a report we published last month that looked at several factors and extrapolated the lifetime likelihood of going to State or Federal prison. 5% of all people, or 1% of women and 9% of men, will go to prison during their lifetimes if the 1991 incarceration rate remains the same. Is that scary?

But how about another recently-published report, which we can see as positive if not still a little alarming. Since the Brady bill was enacted, each month an average of 6,600 firearms purchases were prevented by background checks of potential gun buyers. Over 70% of those people were rejected because they were already felons. That's 6,600 gun purchases per month prevented due to the Brady act–which may be scary, but which shows that Federal actions really can make a difference in the landscape of crime in this country.

I start with those two reports to give you an idea of the kind of information that is coming out of NCJRS. We distribute a huge amount of information each year, and I hope that this presentation will give you an idea of what kinds of services we can provide to you and your patrons.

Background

Congress recognized the need to collect criminal justice information in a central

location, and directed the National Institute of Justice (NIJ), which is the research and development agency of the U.S. Department of Justice, to "serve as a national and international clearinghouse for the exchange of information" in criminal justice. So in 1972, NIJ established its clearinghouse, the National Criminal Justice Reference Service, or NCJRS. NCJRS has grown to serve all the agencies of the Office of Justice Programs within the U.S. Department of Justice. So NCJRS is actually an umbrella clearinghouse for several clearinghouses serving the Department of Justice and the White House's Office of National Drug Control Policy.

For the Office of Juvenile Justice and Delinquency Prevention, or OJJDP, NCJRS provides information and services to juvenile justice professionals and policy makers, produces and distributes the agency's publications, and prepares customized responses to information requests.

For the Office for Victims of Crime, or OVC, NCJRS responds to requests from crime victims, victim services agencies, and researchers for victim-related information. Topics addressed include child physical and sexual abuse, victim services, domestic violence, victim-witness programs, and violent crime.

For the Bureau of Justice Statistics, or BJS, NCJRS aims to provide easy access to crime and justice data. In addition to distributing BJS publications, the clearinghouse responds to statistics requests by quoting statistics over the phone and offering document data base searches, statistics information packages, referrals, and other related services.

For the Bureau of Justice Assistance, or B.A., NCJRS provides State and local criminal justice professionals with reference and referral services, distributes publications, and participates in conferences and other outreach activities. B.A.'s mission is to support innovative criminal justice programs through funding, technical assistance, training, and information dissemination.

NCJRS also includes the White House's Office of National Drug Control Policy, also known as the "Drug Czar's" office. NCJRS gathers and disseminates information on drug policy and the intersection of drugs and crime, placing special emphasis on serving the information needs of local and State criminal justice and health policy makers and practitioners.

Information Collection and Dissemination

So what kinds of information is NCJRS collecting and disseminating? This gives you an idea of the basic subject matter we are dealing with:

• Law enforcement (e.g., community policing, effective policing strategies)

• Courts (e.g., managing the huge caseload now before our courts)

• Corrections (e.g., providing health care to inmates, especially HIV-positive inmates)

• Juvenile Justice (e.g., programs to prevent juvenile delinquency)

• Victims (e.g., rights of the victim)

• Drugs and Crime (e.g., how drug use affects other crimes)

• Violence

• Criminal Justice

• Technologies (e.g., smart guns and less than lethal technologies)

We cover these subjects by collecting and distributing:

• Research, and evaluations of research and programs

• Program descriptions

• Statistics, and

• Funding Opportunities

NCJRS focuses on serving professionals in the criminal justice field, including Federal, State and local policy makers, criminal justice researchers including academia, law enforcement officers, court personnel, prison and jail personnel, juvenile delinquency workers, victims rights advocates, public health officials, the media, and of course librarians, who serve all of these groups.

NCJRS sends out hundreds of new publications every year; in fact about 4 million paper documents go out of our warehouse each year. Of course, depository libraries receive almost all of this material via GPO.

I'm very glad to report that 95% of this new printed material is also going up on our Web site in full text as it is distributed in print. NCJRS has no plans to discontinue printing documents, but we do find ourselves reaching more people who can use our information by putting it online, and we love the ability for users to gain such quick access to the full text of documents by going to them directly online. We'll look at the NCJRS Web site in just a couple of moments.

NCJRS Document Data Base

But first let me talk about the NCJRS Document Data Base, which many of your libraries probably own on CD-ROM. In fact, when this audience hears the word "NCJRS" you may only think of the CD-ROM.

The NCJRS Document Data Base is a bibliographic database of abstracts for criminal justice literature.

This slide shows the subjects we collect on and how they are distributed statistically. As you can see, our big emphases are law enforcement and courts, with corrections and statistics also big. Juvenile justice is also a very important area that has been growing recently.

NCJRS collects a variety of materials, including books, Federal Government documents, and journal articles.

NCJRS collects beyond the scope of other collections, including State and local government reports, NCJRS agency-sponsored research studies and reports, evaluation reports, training manuals, speeches, program descriptions, and international criminal justice publications.

We are proud of our collection of materials that other sources don't collect: what can be thought of as the grey literature in criminal justice, like unpublished papers and local government reports. Often when researchers look to see what is really happening in anti-crime efforts, what kinds of programs work and which don't work, it's that grey literature that comes through with some answers.

As many of you know, the CD-ROM is a GPO depository item.

The database is also available on DIALOG as file 21. The file on DIALOG is updated monthly. We've been on DIALOG for years and years, and in fact the NCJRS database has existed as an online-only bibliographic database since the early 1970's.

Let me point out also that we do produce print bibliographies from the database. These are searches of the database on the most popular topics–like community policing, violent juvenile offenders, or capital punishment–and are available for sale. We have over 100 topics available in print form. It is also possible to have NCJRS perform a search of the Document Data Base for a charge, and patrons should call NCJRS to ask for such a custom search.

One thing we're really excited about is that the Document Data Base is going to be coming onto the Web in the next couple of months; I would estimate in June. We are not sure yet what the accessibility will be, and whether we will be required to charge access fees or not. I wish I had an answer on that for you today, but I do not. The Web address on the screen is our basic Web site address, and when the Document Data Base comes on line you can be sure that we'll feature it on the home page. I will also announce it on GOVDOC-L, for those who subscribe to that listserv.

I am working on the user interface for the Web product and think it's going to be really user friendly with some nice features. Let me say that we encourage feedback from users on our products and invite you to let us know about features you like or don't like. The software GPO uses is not infinitely customizable, or sometimes customization comes with a prohibitive cost, so we aren't able to incorporate every enhancement that we would like–however, the CD-ROM in fact has had some changes made to it over the past few years in response to comments from depository librarians. So I assure you that your comments don't fall on deaf ears.

Document Delivery

A very important fact about the Document Data Base is that all of the items abstracted on it are available for interlibrary loan (ILL) from NCJRS. There is a charge of $4.50 per item for ILL's which needs to be prepaid, which you can do by check, credit card, or deposit account. The address and telephone to initiate a loan are on the screen. Please just send us a standard ALA interlibrary loan form and we will get the material out to you. Our collection is not on OCLC., so the ALA forms are the way to go.

Keep in mind also that whenever NCJRS has copyright clearance, we will make a photocopy of a publication abstracted in the database, so that is another option for document delivery. The charge is $5 per publication, plus 10 cents per page.

Whenever NCJRS is able to make photocopies of a document, the data base record will say in the sale field, "NCJRS paper reproduction sales." Then just give us a call or mail, fax or e-mail your request to us.

Microfiche Ceased

Some of you may be aware that NCJRS went through a big round of budget cuts, actually taking effect exactly one year ago today. We lost several staff members and along with them the microfiche program. So NCJRS is no longer putting documents on microfiche, but we hope to go to electronic imaging in the not too distant future. For those libraries that have retrospective collections of NCJRS microfiche, keep in mind that the Document Data Base is the best index to the fiche. About one third of what is on the Document Data Base is available in full text on the fiche, and for each publication available on the fiche, the SALE field of the data base record says "NCJRS microfiche sales," just as it says "paper reproduction sales" on the screen here.

NCJRS Web Site

So while we're not producing the microfiche, we are putting lots and lots of full text documents from the Department of Justice online on the Web site. So let me give you a little tour.

This is the Justice Information Center, or NCJRS' Web site, at <http://www.ncjrs.org>.

We've tried to orient the Justice Information Center for someone who is looking for information on a particular topic, because that is the way most users come to us. From the first screen you can choose from any of the main subject areas we cover, like corrections or juvenile justice or law enforcement. For example, let me choose Courts.

As I've mentioned, we link to hundreds of full text documents—actually more than 700—but also to lots of other Internet sites related to criminal justice, and we also provide some

information on listservs in the field. From this screen I'll choose documents.

We try to provide all publications in two formats: in plain ASCII text, and in PDF or Adobe Acrobat format. For example "Assessment... Day Fines" is in ASCII.

Next I'll back out of this and go to another topic area. Let's look at Juvenile Justice. This is broken down further into topic areas, so let's look at Corrections.

"Boot Camp Drug Treatment..." is an example of a PDF file. This Adobe Acrobat format has the advantage of retaining all of the graphics, so for example with a publication like this we are able to view the graphs. The user does need to have the Adobe Acrobat software loaded on their desktop to view these files. The software is free and a link from the home page shows you how to download it.

I'll go back to the home page. There is a keyword search function here, which unfortunately I can't demonstrate because I'm not using a live connection. But you can search on any word appearing anywhere in the full text of the ASCII publications as well as the html files. The search, which uses the Excite search engine, supports full boolean logic.

Below the topic areas is a link to "New This Week," which lists everything we've put up in the last week. You can also click on previous weeks to see what else is new. There's also a link to Current Highlights, which lists the most noteworthy new items, and usually things stay up there for about one month.

There is also a link here to lists of conferences in criminal justice. We plan to make this a searchable database, but for now you can look at lists of conferences in the field with their dates and contact information.

There is also a link to Justice Grants, which as you might imagine is a popular spot. This area lists all of the funding opportunities coming out of the NCJRS agencies, and usually gives you the full text of grant solicitations and often

the application forms needed. Most of these grants are for criminal justice professionals, be they academic researchers or practitioners in the field like government workers who deal with juvenile delinquents. There aren't funding opportunities for general college and university study, because these agencies aren't oriented toward that type of aid.

There is also a paragraph explaining NCJRS on the home page, and links to each of the government agencies which supports NCJRS.

I wanted to point out that one of the NCJRS agencies, the Bureau of Justice Statistics or BJS, is about to unveil its new Web site this month. Not many people outside of BJS have seen it yet, so the drama is building up now to see what it will be like--I've heard that it's going to be great.

BJS is very committed to making statistical data available in a usable electronic form to everyone who can make use of it. For example, when they put the text of one of their publications online, they are also making a live online link to the original data set itself, for researchers to download and manipulate. This is a great boon to any researchers using criminal justice statistics. I believe that someone from BJS is going to be speaking here at the conference tomorrow, and I encourage anyone with an interest in criminal justice or even just in statistics to attend.

Then scrolling down below the links to the agencies we have again the Current Highlights.

JUSTINFO

After that is a little explanation for JUSTINFO. JUSTINFO, or Justice Information, is an electronic newsletter we put out twice a month. It comes to subscribers via e-mail, and we use a listserv to maintain the distribution list.

Here is the information on how to subscribe. Send the message "subscribe justinfo your name" to <listproc@ncjrs.org>. Then twice a month you'll get a short summary of all the

new publications we've come out with, along with a URL for where to find them online and/or information on how to get them in print. We also let people know about grant opportunities, noteworthy conferences, new agency initiatives, and things like that. I encourage you to subscribe to JUSTINFO if you work with criminal justice information. Like I said, it will come to you via e-mail twice a month, on the 1st and the 15th of the month.

Then at the bottom of the home page it lets you know that users can send questions to the e-mail address <askncjrs@ncjrs.org>. Users can send publication orders for things in print, or ask reference questions. We have recently dedicated a entire full time position just to answering the reference questions we get coming into the askncjrs mailbox.

Since we're at the bottom of the home page let me go a little more into the reference services we offer.

Reference Services

We answer a large number of telephone requests: last month we had 7400 telephone inquiries. We answer a broad range of inquiries from a broad audience, and again we aim to focus on criminal justice practitioners in the field and researchers. On the screen is one of our 800 numbers and the askncjrs e-mail address I just mentioned. I brought a few hundred Rolodex® cards with this information, so you should be able to get one of those. You are welcome to use the 800 lines yourself, or to refer patrons directly to us.

We have as a first line of defense, as it were, a staff who answer the 800 lines, and then for the tougher questions, we have people with experience in the field who can call people back. For example, we have two ex-police officers, someone who used to work in a prison, a couple of people who worked in court pretrial services; so we do have people with substantive knowledge who will try to answer your questions or lead you in the right direction.

JUVJUST

Here is the address to subscribe to the JUSTINFO newsletter again. I also want to say that we have another electronic distribution list called JUVJUST, which is just for juvenile-related information coming out of the Office of Juvenile Justice and Delinquency Prevention at the Department of Justice. The list is aimed at criminal justice professionals working with juveniles or on juvenile-related issues. To subscribe to that list, send a message to the same address on the screen, but make the body of the message say "subscribe juvjust your name."

Key Sources

I wanted to finish today by pointing out a couple of key sources in some of the most popular criminal justice subjects you may be having to address in your libraries today.

First, criminal justice statistics. We distribute a lot more than statistics, but we get so many statistics-related questions, and I know you do too, that I wanted to summarize the key sources for you.

The "Uniform Crime Reports" come out of the FBI and aren't distributed by NCJRS, but they're a very key source. The Uniform Crime Reports, which say "Crime in the U.S." on the cover and come out annually, report on crimes reported to the police. They get pretty detailed in their coverage of offenses and different areas of the country. You can also get to the data online at < http://www.fbi.gov/publish.htm >.

The "National Criminal Victimization Survey" is kind of the flipside to the Uniform Crime Reports. This is an annual survey that calls thousands of people up and asks them if they have been the victim of a violent crime. So while the Uniform Crime Reports pick up all crimes reported to the police, the Victimization Survey is also going to pick up crimes NOT reported to the police. That kind of data can be important for crimes often not reported, like violence against women. The address for the Bureau of Justice Statistics,

which puts this out, is
< http://www.ojp.usdoj.gov/bjs >.

And finally, the "Sourcebook of Criminal Justice Statistics," which is probably another dog-eared publication in your library if you get any crime-related questions. This is another publication of the Bureau of Justice Statistics, and compiles hundreds of charts from their various data collections, on tons of subjects such as prison and jail populations, the costs to governments of prisons and police forces, the race and sex of victims and perpetrators of crime, and so on. This Sourcebook is available online at < http://www.albany.edu/sourcebook >. It is also going to be coming out very, very soon on CD-ROM, and that CD is probably going to become an important part of your reference collection.

Another big topic is drugs and crime. There are three publications we use constantly to respond to drug-related questions. Pulse Check: National Trends in Drug Abuse is an interesting publication. To create it, ethnographers go out in the field and actually ask people on the street, "What are you using and how much did you pay for it?" So it is used as a barometer of the types of drugs that are popular on the street, their purity, how people get them, etc. This used to be quarterly but now comes out twice a year.

The National Drug Control Strategy is the centerpiece document for the Drug Czar's office at the White House. It maps out the Federal Government's strategy for combating drugs and is constantly referred to in other documents and initiatives.

The last thing I'll point out is Drug Use Trends, a fact sheet which gets a lot of circulation. This is a good reference source also. By the way, all of the publications are available in full text on the NCJRS Web site at < http://www.ncjrs.org >, and are also available in print from us.

The last slide I have today is on Juvenile Crime. We get a huge number of questions about this, and in fact information on juveniles

is the most-accessed part of our Web site. A couple of key sources we are currently using and distributing are listed here.

State Responses to Serious and Violent Juvenile Crime is a great resource on how states are combating violent juvenile crime problems. It also leads readers to a number of other sources of information.

Juvenile Court Statistics, put out by the Office of Juvenile Justice and Delinquency Prevention, is one of the staple statistical sources we distribute.

And lastly, there is Combating Violence and Delinquency: The National Juvenile Justice Action Plan. This came out almost a year ago already, but we are constantly referring people to it as an outline of the juvenile crime problem in this country and ways that the Federal Government is addressing the problem.

Again, each of these is available in print from us and you may already have them in your depository collections, and they each are also available online.

Innovation on the Web: Everything Old Is New Again

Saundra Williams
The University of Memphis
Memphis, TN

The topic given this panel, Government Documents Librarians' Innovation on the Web, appears to me to be old-fashioned librarianship. We are learning how to exercise our traditional roles and formal training in a world for which we had no preparation. On the Web we are identifying, evaluating and describing, organizing information and linking the public to the best sources. We are doing the traditional things we have done in our own libraries for years only now with a national audience.

It shouldn't come as a surprise that Government publications librarians are taking advantage of the Web in a collaborative way. We have always felt a cohesiveness that I don't believe many other librarian specialists feel. In the grand scheme, we are but a small band who love what we do and have sometimes felt a little alone. The Web has brought us even closer together because of this opportunity to share our resources and talents. When one library in the field can do something valuable, maybe even tedious, the other almost 1400 depository libraries don't have to do it! Collaborating and dividing labor is a great opportunity for us.

I am going to visit a few Web sites which illustrate innovative uses of new technology in the broad areas of traditional librarianship. If I had time to show all my favorite sites and give credit everywhere it is due, we would be here a long time, because many people and libraries are doing truly fine things on the Web. But I had to choose and limit, so here are the selected resources.

Traditional Librarian Roles

> Identify
> Evaluate
> Organize
> Present to Public
> Collaborate

"I am well aware that the reader does not require information, but I, on the other had, feel impelled to give it to him." *Jean Jacques Rousseau, Les Confessions*

I love this quote because it expresses my feeling about what librarians do and leads so well into the first topic, creating resource guides.

Resource Guides

• Provide Instruction

• Identify, Evaluate and Describe Sites

• Organize and Annotate Class Guides

• Provide Broad Subject Access

Provide Instruction

Guide to Thomas - Larry Schankman, Mansfield University
http://www.clark.net/pub/lschank/Web/mythomas.html

It's fitting to begin with a guide from one of the best and first documents librarians on the Web. Larry Schankman's Guide to Thomas provides logical steps and divisions for finding

information using Thomas. He explains processes, terms, how to cite, and so on, all in one complete guide.

Identify, Evaluate and Describe Sites

U.S. Courts - The University of Memphis
http://www.lib.memphis.edu/gpo/unclesam.htm

Since I have to be on this panel and you don't, I get to show my own site. Don't worry, I limited myself to two! I like annotated guides. I want a description of the site, dates included and other pertinent information before I go there. I only have so much room in my head, so I need reminders.

Organize and Annotate Class Guides

Class Guides - Stephen Patrick, East Tennessee State University
http://www.ETSU-TN.EDU/library/demo

Stephen has about 20 class guides up with more to come. He has an art background and is responsible for the law library and Government documents, so you see quite a variety of guides here. He collaborated with the professors on all these. Students must use these guides in fulfilling their assignment. This is great publicity for librarian guides as they get students used to looking at libraries' Web pages for more efficient information gathering.

Broad Subject Access

U.S. Resources - Peggy Jobe, University of Colorado, Boulder
http://www-libraries.colorado.edu/ps/gov/us/Federal.htm

Numerous libraries have chosen to arrange their pages by broad subject access. At the University of Colorado, Boulder, Peggy has chosen to provide subject access and has added value by briefly annotating the links.

Subject Areas - Barbara Whitener, University of Louisville

http://www.louisville.edu/groups/library-www/ekstrom/govpubs

Another library using subject areas is the University of Louisville. A lengthy and well done subject arrangement here is done by Barbara Whitener. It is so up-to-date it has a very timely guide for floods.

Professional Expertise and Personality

> Professional Expertise
> Creativity
> Personal Interests

Some pages reflect the professionalism, personality and creativity of the individual librarian or librarians.

U.S. Depository Ready Reference Sources at Columbia University
http://www.cc.columbia.edu/cu/libraries/indiv/dsc/readyref.html

Several libraries have developed electronic reference shelves patterned after our traditional ones but including both print and electronic documents. This one at Columbia shows imagination, professional expertise and ambition. The list indicates if the titles are in print, CD-ROM, electronic or all three, gives the format on the Web and a Columbia crown indicates licensed databases available only locally.

Creativity

Putting Digital Docs to Work - Paul Lewis, University of South Carolina, Aiken
http://library.usca.sc.edu/library/docs/govdocs.htm

Paul Lewis advertises the practical use people can make of Government publications, particularly CD's. He used his creative ability and mapping expertise to develop the unusual. His site has a variety of local maps which he developed. This site makes me want to run to the Geography Department for an intern with GIS experience!

Personal Interests

Resources of Use to Government Documents
Librarians - Andrea Sevetson, UC Berkeley
http://www.library.berkeley.edu/GODORT

As Chair of GODORT, Andrea's
responsibilities and interests led her to
construct this highly valuable site for
documents librarians. This is the place to go
for current Government/GPO policy and
happenings, for GODORT information and
many items of professional interest.

Collaboration

> Share the Labor
> Build Partnerships
> Grants

Several types of collaboration are going on.
One of the ways we documents librarians
collaborate is to divide the labor.

Share the Labor

Migrating Government Publications - The
University of Memphis
http://www.lib.memphis.edu/gpo/mig.htm

I consider Migrating Government Publications
a "share the labor" kind of creation. Thinking
traditionally, I was going to attempt to mark
our shelf list when a publication went
electronic. (You have to remember this was in
the dark ages before catalog records had the
possibility of URLs, in 1995). But since I was
sure several several hundred other people
were trying to get a handle on this too, eureka,
why not use the Web? That was the beginning
of Migrating Government Publications, found
here in Superintendent of Documents and title
order.

U.S. Government CD-ROMs - Larry
Schankman, Mansfield University
http://www.clark.net/pub/lschankWeb/gpo-
ed.html

We are sometimes asked for a list of the CD's
we have. I don't have to make the list because

Larry Schankman did, and will update it
periodically. Other libraries are providing CD
information in other ways. The University of
Virginia is working on a searchable list. Robert
Lopresti's DocBase CD-ROM guides are
available at the University of Minnesota,
Duluth.

Depository Management

Basic Depository Library Documents - Tom
Tyler, University of Denver
http://www.du.edu/~ttyler/bdldhome.htm

Under the topic depository technical
management, great resources have appeared to
make depository processing and office
management easier. One of the persons
responsible for a management project is on
this panel. Tom has an enhanced Superseded
List, the List of Classes, List of Depository
Libraries, in all some twenty basic depository
documents. In a presentation here on
Monday, Tom said we could "share the grief
and effort of the nitty-gritty of processing."
Here is a fine example.

Item Lister - Government Printing Office
http://www.access.gpo.gov/su_docs/dpos/
fdlppro.html

We used GPO's Item Lister last week when
one of the selectives called for help because
they weren't getting the Congressional Record.
That title did not show as selected by them on
the Item Lister. Previously, we would never
have had access to their items selected list and
would not have been able to check that
possibility and provide help. GPO has much
good information of its own up and provides
files for others to work with and enhance.

Enhanced Shipping List Service - University of
Texas, Arlington, SUNY, Buffalo, GPO
http://libaix01.uta.edu/shiplist/

The enhanced shipping list service is a great
help to regionals and should help traffic about
shipping lists on GOVDOC-L by providing a
title search that identifies shipping lists. It is
great for identifying separates that get

separated from their shipping list. This GPO/university partnership is an example of collaboration to improve depository management, and it is also an example of another traditional librarian role: building partnerships.

Build Partnerships

GPO Access Gateways
http://www.access.gpo.gov/su_docs/aces/aaces004.html

Long before the shipping list partnership, GPO partnered with libraries to create Gateways to GPO Access. Ann Sanders, on this panel, represents a Gateway library so the amount of time this important innovation deserves can be given it.

Infomine - University of California, Riverside
http://lib-www.ucr.edu/govinfo.html

Infomine was begun at UC Riverside and is now a collaborative project between all nine UC campuses and Stanford University Government information librarians. More than HTML coded links, this site is a database with a sophisticated search engine looking for librarian assigned indexing terms. This one is a major undertaking and is beyond most of our capabilities, but I'm glad someone can do it.

Grants

Government Information Sharing Project - Oregon State University
http://www.govinfo.kerr.orst.edu/

The Department of Education funded this site with the original purpose of demonstrating improved access to electronic Government information especially for remote users and the general public. The Census information found here is from Government CD-ROMs. A fabulous resource.

Federal Web Locator - Villanova Center for Information Law and Policy
http://www.law.vill.edu/

I'm sure everyone is familiar with Ken Mortensen's Federal Locator at Villanova. This is a great place to search for agencies and departments without having to know Government structure.

Unsung Heroes and Award Winners

Government publications librarians are doing things behind the scenes to improve the work those outside our profession will be unaware of. These are the sites you won't see mentioned in computer magazines and newspapers columns but are very useful to documents librarians. Other Government publications librarians are way out there, visible and award winning.

Needs and Offers List - Kevin Reynolds, University of the South
http://www.sewanee.edu/dupontlibrary/GovDocs/govdoc.html

Kevin is providing a much needed and time-consuming resource for documents librarians.

Home Pages - Grace York, University of Michigan
http://www.lib.umich.edu/libhome/Documents.center/

Grace York's pages came up in April, 1995. I first saw them in December 1995 when we first got Web access. I knew immediately I was seeing what librarians should be doing with this new resource, the Web. I couldn't possibly have chosen a single page from her collection. She has it all. Her Web site was the innovation beginning. She has been my inspiration for creating Web pages, and I make no secret of my hero worship.

Electronic Government information may have forced our hand, but documents librarians have been up to the challenge. They are out there running circles around everyone else in recognizing the instructive and collaborative opportunities of the Web. I've always felt very lucky to be a documents librarian. It takes a special, dedicated person to be good at this. We should all congratulate ourselves on

making it through the last few years, sometimes barely hanging on by our fingernails, and we should congratulate ourselves that, more than just hanging on, we have taken a new medium and shown our profession what can be done with it.

Bibliographic Access to Electronic Resources: International Standards
Summary of Remarks

Jean Hirons
Library of Congress
Washington, DC

CONSER Guidelines for Online Versions

In August 1996, the CONSER (Cooperative Online Serials) Program issued its "Interim Guidelines for Online Versions" that gives participants the option for creating separate records for remotely-accessed versions of printed (or other format) serials or noting the existence of the online version on the record for the original. The latter has been dubbed the "single-record" approach.

The need for the single-record approach encompasses both economics and access. While online versions are proliferating and potentially doubling the workload of institutions such as GPO, the same institutions are losing staff, particularly professional catalogers, and are being forced to do more with less. At the same time, reference librarians, frustrated with the proliferation of records created for microforms, favor a single-record approach that will tell patrons what the library has and in what format.

One of the problems, however, is the divergent needs of shared and local databases. For the shared database, such as OCLC, the record must represent what exists and be free from local data in order to be useful to all libraries. Locally, libraries must contend with the varying abilities of their automated systems, including how information displays to the users. Because each local system differs, national and international standards cannot be written that will address their individual needs. Instead, standards are written that will accommodate the national-level record.

The single-record approach is an alternative to cataloging. The provisions for giving a note (field 530) and added entry (field 740) for a related version are accommodated by rules in the Anglo-American Cataloguing Rules, 2nd ed. (AACR2). The only departure from traditional practice is in providing the electronic location (field 856) and in not creating a separate record for the online version. The single-record approach is possible for online versions because there is generally only one version and it is produced by the same publisher as the original. The ability to directly access the publication from the 856 field in the cataloging record also means that less information about the version may be needed. However, information regarding access restrictions and variations in title is considered necessary.

CONSER libraries have been using the guidelines and find them to be adequate for the present. During a discussion at ALA Midwinter, CONSER representatives made it clear that they wish to continue the policy for the near future. The Library of Congress is also in the process of developing guidelines for internal use that will provide criteria for when to apply the single-record option and how to construct the note. These guidelines will be issued as part of the Library's Descriptive Cataloging Manual.

For more information on the CONSER guidelines:

> CONSER home page:
> http://lcweb.loc.gov/acq/conser/

The CONSER home page includes CONSER Cataloging Manual, Module 31, Remote-Access Computer File Serials and the Interim Guidelines for Online Versions.

Journal of Internet Cataloging
I have written an article on this topic that will appear in v. 1, no. 2 of this new journal from Haworth Press.

Issues Related to Seriality

While online versions are one problem, a potentially more difficult problem for catalogers is the fact that many serials are changing their form when they go online. Rather than being issued in a succession of numbered parts, many serials are turning into databases of searchable data or articles. The change from multiple issues and chief sources to an updating work with a single chief source has important ramifications for our cataloging rules.

Crystal Graham (UC San Diego) and I have been invited to address these problems and how they might be addressed in AACR2 at a conference to be held next October in Toronto. The Conference on the Principles and Future Development of AACR is sponsored by the Joint Steering Committee (JSC) on the Revision of AACR and is by invitation only.

Our paper considers ways in which we might redefine "serial" in order to accommodate differing forms of multiple versions of the same work and how such redefinition would impact on the cataloging rules used to create bibliographic records for serials. We will address the possible return of latest entry cataloging for updating works and look at the ways in which change is accommodated in our records. The paper also introduces the concept of the "ongoing publication" and offers principles that should be applied when cataloging ongoing publications.

The final papers will be posted on a Web site for world-wide review this summer.

For more information:

The JSC Web site is at:

http://www.nlc-bnc.ca/jsc/index.htm

Bibliographic Access to Electronic Records: National Standards

Thomas A. Downing
U.S. Government Printing Office
Washington, DC

Good morning. It is a pleasure to be here today with Jean Hirons of the Library of Congress, and Wil Danielson, Eileen Seremeth, and Steve Uthoff of the Government Printing Office (GPO) Cataloging Branch.

We have an ambitious schedule this morning. To move things forward I will limit remarks to general matters associated with cataloging operations.

Those interested in our Internet related Cataloging Guidelines as a follow up to this morning's program will find two guidelines of potential interest. Our guidelines for cataloging electronic files and for linking records are available on GPO Access at:

http://www.access.gpo.gov/su_docs/dpos/fdlppubs.html.

At the present time, more than 1,700 Monthly Catalog records contain Internet related URLs. While many records represent monographs, most represent serial titles.

Although not developed for maps and monographs, we apply selected Internet related CONSER policies to these materials. The authority of CONSER policies and their widespread use as guidelines within institutions that produce Internet related records create a solid foundation for application to serials, maps, and monographs.

While people continue to discuss options for some sort of generic "cataloging" of Internet related titles, the benefits associated with providing Internet access through records

produced in accordance with AACR2 are undeniable. Agencies of the United States Government are using the Internet in an increasingly responsible manner for publishing information of importance.

Such information warrants the AACR2 cataloging required to assure electronic access to publications via online public access catalogs. Although continued access to electronic texts via Monthly Catalog records is not assured, trends in Internet related publishing suggest that the future of continued access will be better with each passing year.

Outreach efforts by Robin Haun-Mohamed and personnel of the Depository Administration Branch, specifically their efforts to identify and produce stable and long lasting presentations of published information, should produce tangible results. This work is complemented by efforts undertaken by Duncan Aldrich and Electronic Transition Staff (ETS) personnel to develop partnerships with various institutions to store electronic publications and provide long term access to them. These combined efforts should further contribute to the value of our cataloging, increasing the probability that Monthly Catalog records will provide hot-linked access to most of the electronically available titles they represent.

The availability of CONSER policies to guide our efforts and the suitability of OCLC's environment to produce these records have helped us to react quickly to a relatively new environment. These conditions have been useful to Steve Uthoff and others of us within

the Cataloging Branch who have worked to establish suitable internal guidelines. During this process, Jean Hirons has provided guidance to us from the perspective of CONSER.

These efforts and the work of our catalogers have contributed to our current status as the second largest producer of OCLC records with URLs.

I would like to conclude by thanking Jean, who, as the Acting CONSER Coordinator, has wisely permitted member institutions to determine for themselves if they wish to use records for physical forms for recording Internet access related information for electronic versions or if they wish to produce a separate record for such resources.

The "Interim Guidelines for Online Versions of Printed Serials" do not require CONSER institutions to produce a separate record for an electronic version if a suitable physical form record may be enhanced with Internet access related information. Based on this interim guideline, institutions may decide for themselves if a separate record is required.

This optional approach is well suited to our needs. Although we expect that an increasing number of serials and monographs may originate as "Internet only" titles, recent experience indicates that most titles, particularly serials, retain physical forms and assume additional availability via the Internet. Were it not for the option to use a single record for both versions, our workload could increase without a corresponding increase in the number of titles. Such a situation would jeopardize our ability to produce cataloging records in a timely manner.

CONSER's Interim Guidelines are useful for their practical applications within cataloging operations and, as appropriate, are appreciated for providing a "single record" approach for public access. With many titles in both physical and electronic forms, CONSER's policies minimize a potential increase in

workloads and provide access to many electronic titles in ways that are acceptable to most institutions.

Thank you for being with us this morning. At this time I will turn our program over to Wil Danielson who will provide insights and examples of cataloging Internet related titles.

Internet Cataloging at GPO

Wilfred D. Danielson
U.S. Government Printing Office
Washington, DC

Good morning. I'll make a few comments about cataloging remote electronic resources or "Internet documents" and then, with Joe Paskoski's help, will show some examples from the online Monthly Catalog (MOCAT).

The first Internet-related records I produced had already been cataloged by GPO in paper so it was just a matter of adding the few extra fields. My first "Internet only" record, however, gave more of a sense of going into new territory. This was partly because of the computer file format, but the novelty was not so much the cataloging as beginning to access and use the Internet.

My first impression of the Internet was that it is incredibly fast. Later this enthusiasm was to be tempered by delays and the inconvenience of cataloging from the Internet. Searching for publications lacks precision. Access to files may be slow. The remote file will sometimes vary slightly from what may be essentially the same document in paper. The imprint and colophon may be lacking. The contents or the URL of a "publication" may change. The remote file is not only intangible but may be a moving target.

Description of electronic files requires more thought than typical paper documents do. Notes are mostly cataloger-composed rather than quoted. This all takes more time, but the possibility of accessing the document itself makes it worth the effort. By providing accurate description and the hot linked URL, the cataloger, in effect, brings the document to the user. This feature alone far outweighs any inconvenience of working with remote files.

At a time when cataloging was becoming a bit routine, the Internet added a new dimension. It also caused a new level of professional interest and activity.

Now we'll look at some examples of MOCAT Internet records.

The first is OCLC 35747216, The Constitution of the United States of America. For this one we will take some extra time to demonstrate MOCAT Web applications. From the search results screen, we can click on the URL in the brief record, accessing the document in one step. We should note that the text record is identical to the HTML record, but is not hot linked. The HTML record is hot linked both from the URL in its brief record display and in the 856 field of the full record.

This title is an example of adding the Internet availability information to an LC record. For that we added the 2nd 074, item number (online); the 530, "Also available from GPO Access ..."; and the 856, URL. This congressional is one of the few at the Web site which was assigned a URL.

Next is OCLC 35812475, The 1944-45 New York and Washington-Moscow KGB Messages. This is an example where there was a bibliographic record for the paper version of the document, but GPO had not cataloged or distributed it. So we added the 074 (and there's only one); the 500, "Not distributed" note; the 530, which has "Available via" rather than "Also available via"--because it was not distributed; and the 856.

My last example is OCLC 36505727, The KGB in San Francisco and Mexico City... This is an

Internet only or computer file record. No record for it existed in OCLC. Since this document is neither serial nor map, a K (minimal) level record was created. Unlike the previous examples, this record has the 245 subfield h, with the general material designation "computer file" (soon to be "electronic resource"); no 300, physical description; the 538, mode of access (instead of 530 availability) note; and the 500, source of title note.

```
The KGB in San Francisco and Mexico City and the GRU in New York and Washington.
[computer file] /. [1995?] United States. D 1.2:97008186. [[0306 (online)]].
http://www.nsa.gov.:8080/docs/venona/monographs/monograph-4.html

<001>     ocm36505727
<005>     19970307140858.0
<040a> GPO
<040c> GPO
<035a> (GPO)apn97-008186
<074a> 0306 (online)
<086a> D 1.2:97008186
<099a> D 1.2:97008186
<049a> GPOO
<245a> The KGB in San Francisco and Mexico City and the GRU in New York and Washington
<245h> [computer file]
<245c> National Security Agency.
<246a> GRU in New York and Washington
<260a> Fort George G. Meade, Md. :
<260b> National Security Agency,
<260c> [1995?]
<440a> VENONA historical monograph ;
<440v> # 4
<538a> Mode of access: Internet from the National Security Agency web site.
<500a> Title from title screen.
<590a> [cat:wd]
<650a> Espionage, Soviet
<650z> United States
<650x> History
<650x> Sources.
<650a> Intelligence service
<650z> United States
<650x> History
<650x> Sources.
<610a> Soviet Union.
<610b> Komitet gosudarstvennoi bezopasnosti
<610x> History
<610x> Sources.
<610a> Soviet Union.
<610b> Glavnoe razvedyvatelnoe upravlenie
<610x> History
<610x> Sources.
<710a> United States.
<710b> National Security Agency.
<856u> http://www.nsa.gov.:8080/docs/venona/monographs/monograph-4.html
<8562> http
<990a> 97-00012
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Internet Cataloging at GPO

Eileen Seremeth
U.S. Government Printing Office
Washington, DC

I believe that I cataloged my first "Internet" title during the summer of 1996. At first, I felt it wasn't as bad as expected because I was familiar with AACR2, chapter 9 when cataloging CD–ROMS for about ten years. With training, learning new Internet terminology and having GPO Guidelines for online cataloging, I felt comfortable functioning with this newest type of cataloging. Yes, when we first started, it took a bit longer to catalog electronic titles because many of us had to develop Web browsing skills and there were many unanswered questions and problems with electronic titles. GPO Cataloging Guidelines for online cataloging were developed during 1996.

To catalog, I first search the OCLC data base and decide whether the titles would be cataloged in minimum level (if there are no OCLC records) or full level (if OCLC records are found and can be adapted). Once I have the URL, I add 074, 530 and 856 fields to existing OCLC records. If there is no existing record, I catalog the title originally in minimum level by adding 074, 538 (mode of access), 500 (title from online title screen), and 856 fields. Internet cataloging is not really that difficult but different. We will improve as time goes on.

The GPO cataloging record for The Resource Directory for Older People was added to the OCLC as an adaptation. A paper copy had previously been cataloged by another library. This document, even though for sale by GPO, was not distributed to depository libraries in paper or microfiche.

1. There is only one 074 field which contains the GPO item number and the format of the document. This document is currently available to depository libraries as a remote file.

2. A 500 (not distributed...) note is necessary to show that the document has NOT BEEN DISTRIBUTED to depository libraries in a physical form (paper or microfiche).

3. A 530 (Also available...) note is also needed to indicate the availability of the remote file and will also give the Federal agency Web site location.

4. The 856 field includes the URL. Formation of this field is important. Once the record is uploaded to the MOCAT Web site, the URL is hot linked to the document.

The document, What Employers Expect of College Graduates, was cataloged for the OCLC as an adapted record. After searching the OCLC data base, I found that this document had been cataloged and distributed to depository libraries sometime during 1994 in a paper format. As per GPO Cataloging Guidelines, I compared the online version with the paper record and determined both documents were the same and the OCLC record would be adapted.

1. There are two 074 fields. This document is currently available to depository libraries as a paper format and a REMOTE FILE.

2. The 530 (Also available ...) and 856 fields are added to the record.

The document, Using Technology to Support Education Reform, was cataloged using an existing OCLC record. It was previously

cataloged by another library and adapted by GPO. It is also available as a sales item by GPO as noted by the stock number in the 037 field and the price in the 020 field. We have also added a 074 field to indicate its online availability. The following fields were also added to the existing record:

1. A 530 (Also available ...) field.

2. A 856 field.

```
Using technology to support education reform /. [1993]
United States.   ED 1.302:T 22/7.   GPO stock no.: 065-000-00604-9.
[[0461-D-05]].
http://www.ed.gov/pubs/EdReformStudies/TechReforms

<001>      ocm29205672
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<035b> GPO
<037a> 065-000-00604-9
<037b> GPO
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<074a> 0461-D-05 (online)
<086a> ED 1.302:T 22/7
<088a> OR 93-3231
<090a> LB1028.3
<090b> .M43 1993
<099a> ED 1.302:T 22/7
<049a> GPOO
<245a> Using technology to support education reform
<245c> Barbara Means ... [et al.].
<260a> Washington, D.C :
<260b> U.S. Dept. of Education, Office of Educational Research and Improvement, Office
          of Research,
<260c> [1993]
<300a> 110 p. :
<300b> ill. ;
<300c> 28 cm.
<500a> Shipping list no.: 93-0601-P.
<500a> "September 1993"--T.p. verso.
<530a> Also available via Internet at the U.S. Dept. of Education web site.
<504a> Includes bibliographical references (p. 95-110).
<500a> "OR 93-3231"--P. [4] of cover.
<500a> "Contract no.  RR91172010"--T.p. verso.
<590a> [cat:es]
<650a> Educational technology
<650z> United States.
<650a> Educational change
<650z> United States.
<650a> Educational innovations
<650z> United States.
<700a> Means, Barbara,
<700d> 1949-
<710a> United States.
<710b> Office of Educational Research and Improvement.
<710b> Office of Research.
<856u> http://www.ed.gov/pubs/EdReformStudies/TechReforms
<8562> http
<990a> 97-05372
```

A cataloging record for Information Warfare and Deterrence was added to the OCLC database as an original record. There was a LC CIP record already in the database, but because there was no description of paper or microfiche to compare with the online version, GPO Cataloging Guidelines require that we input an original computer file record.

The following fields are unique to this computer file record:

1. The 074 field shows that the document is currently available only on the Internet.

2. This document requires delimiter "h" (computer file) in the 245 field per OCLC guidelines, noting that this is an original computer file record.

3. Please note that there is no 300 field because this is an Internet record which doesn't have a description for physical form per GPO guidelines.

4. A 500 note is needed to indicate the origin of the title: "Title from title screen."

5. The 538 field is needed for computer file records to indicate the "mode of access." This field also gives the Federal agency Web site.

6. The 856 field is added.

```
Information warfare and deterrence. [computer file] /. [1996] National Defense
University.  D 5.402:97010026. [[0378-H-01 (online)]].
http://www.ndu.edu/ndu/inss/books/iwd/index.html

<001>  ocm36271184
<005>  19970128134940.0
<040a> GPO
<040c> GPO
<035a> apn 97-010026
<074a> 0378-H-01 (online)
<086a> D 5.402:97010026
<099a> D 5.402:97010026
<049a> GPOO
<100a> Wheatley, Gary F.
<245a> Information warfare and deterrence
<245h> [computer file] /
<245c> Gary Wheatley, Richard E. Hayes.
<260a> [Washington, D.C.?] :
<260b> Institute for National Strategic Studies,
<260c> [1996]
<500a> Title from title screen.
<538a> Mode of access: Internet from the Institute for National Strategic Studies web
       site.
<530a> Also available in paper.
<590a> [cat;jmn;2ND CORRECTED CARDS]
<650a> Information warfare.
<650a> Deterrence (Strategy)
<651a> United States
<651x> Military policy.
<700a> Hayes, Richard E.
<710a> National Defense University.
<710b> Directorate of Advanced Concepts, Technologies, and Information Strategies.
<776a> Wheatley, Gary F.
<776t> Information warfare and deterrence
<856a> http://www.ndu.edu/ndu/inss/books/iwd/index.html
<8562> http
<990a> 97-00039
```

Internet Cataloging of Serials at GPO

Steven R. Uthoff
U.S. Government Printing Office
Washington, DC

When GPO first began cataloging remote serials and monographs in 1993, our cataloging of remote files was limited to the Federal Bulletin Board and our cataloging instructions for remote files were less than one page long.

In 1995, we began to consult CONSER Cataloging Manual, Module 31, when cataloging remote serials. Then in early 1996, GPO expanded its cataloging of remote files and we began to develop additional GPO guidelines for them. From the beginning, these guidelines have been consistent with national standards, particularly CONSER standards.

When cataloging remote serials, we follow the special instructions in the GPO Cataloging Guidelines that were designed to reduce the time needed to catalog remote files.

The physical form and remote file records GPO creates using the single record approach are, with a couple of exceptions, the same as they would be if we created separate records and linked them only with linking note fields.

The special GPO standards for remote serials are as follows:

1. Strict adherence to the AACR2 definition for serials when determining if a remote file is a serial.

2. The employment of full-level cataloging standards.

3. The use of the word "some" at the beginning of the 530 field notes that

describe remote files. This was suggested by our serial catalogers.

4. When there is more than one URL for a remote serial, the one we transcribe in the serial catalog record is the one for the entire "run" of issues.

Another thing that GPO does differently when cataloging serials is to create individual availability records for specific issues. GPO does not create these for periodicals.

Now let's turn to some examples of serial cataloging records that appear in the Monthly Catalog.

The first serial example is a "remote file record" which we recently created for the online version of the Commerce Business Daily. It has the same special "remote file" fields that Wil and Eileen pointed out in their examples. In addition, it contains special serial fields and it was created following special serial cataloging practices.

Fields of note are:

• The 010 field, which has a CONSER authentication number that was added by the GPO cataloger.

• Next, the 130 "main entry-uniform title" field. At the end of this field, we see a qualifier, which begins with the word "Online."

• Note the absence of a 300 field.

• Further down is a 310 field, with the frequency, which is daily.

- We have a 520 "summary" note, which can be included in full-level remote file records.

- There is 538 "mode of access" note.

- A 580 "linking field complexity" note, with information on the paper version.

- And a 787 "nonspecific relationship entry" field, linking this record to the catalog record for the paper.

The second example is an availability record for the quadrennial serial that is known as the Plum Book, but actually has the title: United States Government Policy and Supporting Positions. Here, we have used a physical form record to provide information on the paper and online versions of this publication. As mentioned earlier, this does not mean we are cataloging both on the same record. Only the rules in AACR2, chapter 12, were followed when this record was updated to include information on the online version. Information on the online version is provided only in three fields. These are the 074 field, item number;

530 field, additional forms available note; and the 856 field, URL address.

- We have three 074 item number fields in this record since it is providing information on three different versions of this publication. The first is for the paper, the second for the microfiche, and the third for the online version.

- In the 300 field is the physical description for the paper.

- We have a 530 note, which begins with the words "Some issues...." This is GPO's standard style for serials.

- Note that are no 776 linking entry fields since we have chosen to represent all versions (paper, microfiche, and online) in a single record.

- At the bottom, we have a 949 field with the initials AVR, which means this record is an availability record.

```
United States government policy and supporting positions /. 1960-.  Quadrennial.
United States.  Y 4.G 74/7:P 75/6/996.  GPO stock no.: 052-070-07076-5. [[1016-A]].
http://www.access.gpo.gov/plumbook/toc.html

<001>  ocmO7111837
<005>  19961121113103.0
<010a> 89643528
<010z> sn 88039058
<040a> GAO
<040c> GAO
<040d> UDI
<040d> DLC
<040d> NST
<040d> OCL
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<040d> GPO
<040d> NST
<040d> DLC
<040d> GPO
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<012b> 3
<012i> 8907
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<019a> 14225482
<035a> apn 97-006035
<035b> GPO
<037a> 052-070-07076-5
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<037c> $21.00
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<050b> U55
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<074a> 1016-B (MF)
<074a> 1016 (online)
<074z> 1037 (online)
<086a> Y 4.P 84/10:P 75/
<086a> Y 4.G 74/9:
<086z> Y 4.G 74/9:S.PRT.102-509
<086a> Y 4.G 74/7:P 75/6/
<099a> Y 4.G 74/7:P 75/6/996
<049a> GPOO
<245a> United States government policy and supporting positions
<245c> Committee on Post Office and Civil Service, United States Senate.
<246i> Conventionally known as:
<246a> Plum book
<246a> Policy and supporting positions
<246a> U.S. government policy and supporting positions
<246f> <1980->
<260a> Washington :
<260b> U.S. G.P.O.,
<260c> 1960-
<300a> v. ;
<300c> 28-31 cm.
<310a> Quadrennial
<362a> 86th Congress, 2d session ([19601)-
<490a> 1984- : S. prt.
<500a> At head of title: Committee print.
<500a> Previously classed: Y 4.P 84/10:P 75/ and Y 4.G 74/9:
<500a> Issue: 104th Congress, 2nd session, Nov. 13, 1996 (Available online, to be
        distributed in paper and MF).
<530a> Vols. for <1984-> distributed to some depository libraries in microfiche.
<530a> Some issues also available via Internet at the GPO Web site.
<550a> Issued variously by: U.S. Congress.  Senate.  Committee on Post office and Civil
        Service, and: U.S. Congress.  House.  Committee on Post Office and Civil
        Service, 1960-1980; variously by: U.S. Congress.  Senate.  Committee on
        Governmental Affairs, and: U.S. Congress.  House.  Committee on Post Office
        and Civil Service, 1984-19 ; by: U.S. Congress.  House.  Committee on
        Government Reform and Oversight, <1996->
<550a> Material compiled by: United States Civil Service Commission, 1960-
<590a> [cat:ml/rev:su]
<651a> United States
<651x> Officials and employees
<651x> Directories.
<650a> Government executives
<650z> United States
<650x> Directories.
<710a> United States.
<710b> Congress.
<710b> House.
<710b> Committee on Post Office and Civil Service.
<710a> United States.
<710b> Congress.
<710b> Senate.
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<710a> United States.
<710b> Congress.
<710b> Senate.
<710b> Committee on Governmental Affairs.
<710a> United States.
<710b> Congress.
<710b> House.
<710b> Committee on Government Reform and Oversight.
<710a> United States Civil Service Commission.
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<830a> S. prt.
<850a> CtY-L
<850a> DLC
<850a> MH-KG
<850a> NIC
<850a> TU
<856z> Online version:
<856u> http://www.access.gpo.gov/plumbook/toc.html
<8562> http
<936a> 104th Congress, 2nd session (Nov. 13, 1996) LIC
<949a> AVR
<990a> 97-04065
```

While most of the time GPO uses the single record approach when cataloging remote files, there are special circumstances where we create separate records for the physical form and online versions.

The first circumstance is when there is a significant difference in the contents.

The second circumstance is when we discover that an existing physical form record is unsuitable for use to catalog the remote file version because of known or suspected bibliographic problems.

The third circumstance is when we catalog the remote file first and must create a remote file record because there are no existing physical form records on OCLC.

The fourth circumstance is when we catalog publications of major significance. In the final example, we have an instance where GPO has created separate records for the online and physical form versions of a publication. The record for the remote file version of the Analytical Perspectives part of the Budget of the United States Government and a comparable record for the paper version are good examples this circumstance.

In this record, the fields of note are:

- The 240 field with a uniform title which has the word "online" as a qualifier.

- There is 538 "mode of access" note.

This time we have included a 776 "linking entry" field, linking this record to the catalog record for the paper version, and a 787 "nonspecific relationship" field, linking this record to records for the other online budget publications and the CD-ROM. We did not include these kinds of fields in the previous example, because we chose the single record approach for that document.

Moving From Print to Electronic Dissemination: When to Do it And How
The National Ocean Service Tide Prediction Tables Experience

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National Ocean Service
Silver Spring, MD

Among the many products of the Department of Commerce, National Oceanic & Atmospheric Administration (NOAA), National Ocean Service, the Tide Prediction Tables are one of the oldest. Since their introduction in the early 1800's, many constituencies and regulations had grown up around them, adding to the complexity of instituting change. When change become inevitable, a period of learning, compromise and adjustment followed.

Background

At the beginning of the nineteenth century, the leaders of the United States of America recognized that our economy was dependent upon its fledgling maritime capabilities. And so, in 1807, Thomas Jefferson created the Survey of the Coast. Besides the activity of mapping and charting our coasts and harbors in support of maritime safety and commerce, there was the need to measure the rise and fall of the daily tides and to compute datums such as Mean Sea Level. This had been done from earliest times by individual Port Captains, but now there was a national need for coordinated measurements and common datum definitions.

Systematic water level measurements in the United States, which are the basis for tide predictions, date from about 1805 in New York harbor. By 1830, the first tide predictions for the United States were formally published in The American Almanac. They included the daily time of high water for Boston, New York and Charleston, with time differences for 96 other stations. In 1867, the first Tide Tables were published, initiating the presentation format which is essentially the same as that still used today. In the intervening years the publication went from East Coast coverage in one volume to global coverage in seven volumes. Meanwhile, in 1836 the Survey of the Coast became the Coast Survey. In succeeding years the Coast Survey would become the Coast and Geodetic Survey (1878), the National Ocean Survey (1970), and finally the National Ocean Service (1982).

The National Ocean Service has been the custodian of the tide prediction information at an enviable time in history. Every few years technological innovation creates new distribution vehicles for information in general, and every few years society creates a new class of users of and stakeholders in the tide prediction information. By closely monitoring its information holdings and their evolving relationship to society and technology, the National Ocean Service has actively sought to change the way it does business in its endeavor to better serve the Nation.

Stakeholders

There is quite an array of stakeholders having an interest in the Tide Tables. Some represent a traditional way of doing business, tradition borne out of the harsh reality of practical

experience. With the recent proliferation of scalable computers and telecommunication networks to satisfy every market niche, stakeholders representing new ways of doing business continue to appear as well. All would need the benefit of an agency that understood their concerns and perspectives: an agency that could successfully draw all parties into the ongoing process of redefining their mutual roles; a process which would return value to all.

The first group of stakeholders that come to mind are the ship captains and pilots responsible for vessels ranging in size from the largest down through the smaller commercial carriers, tug and barge combinations, and those of our commercial fishing fleet. They are not at all interested in change for its own sake, but are very concerned with reliability, practicality, fail-safe operation and return on investment. They know best how situations at sea can quickly become life-threatening when poor planning or just plain bad luck intervene. They need products that perform.

Another group is composed of the career civil servants who, from long-standing dialogue with the members of the first group and even personal experience at sea, are best able to appreciate and represent those interests before others necessarily less intimate with the subject. These civil servants also have the best familiarity with the tide prediction information in its various raw and finished forms, both in the public and private sectors. They would be instrumental in suggesting new products and practical means to achieving desired future courses of action.

As America's merchant marine reached out globally, so expanded the Tide Table coverage, and international agreements between governments followed. As a consequence of incorporating international information in the U.S. Tide Tables it is necessary to honor foreign copyright laws and other sensitivities to the release of their information. Some countries are simply not ready for more adventuresome modes of distribution. We still receive some foreign

predictions in boxes quaintly wrapped with brown paper, tied with string and secured with sealing wax. Other countries, though adopting modern technologies, are very wary of government and private partnerships for distribution.

To facilitate the distribution of the Tide Tables there developed over the years a global network of official NOAA Chart Agents. These are retail outlets ranging in size from "mom and pop" fishing tackle shops to the largest marine supply companies. NOAA not only authorizes them to sell NOAA's products, but encourages them to sell only the latest product editions by offering them good terms for the return of unused product. Chart Agents are very proud of the trust relationship they share with NOAA.

Then, there are embodied in the laws and regulations of the land what appear at first reading to be impediments to altering the way the Tide Tables are produced and distributed. The Tide Tables published by the National Ocean Service are specifically named in the Code of Federal Regulations as the document required aboard all vessels subject to U.S. Coast Guard inspection. And, while the Secretary of Commerce is authorized to enter into partnerships to accomplish Government work, "all fees collected from the sale of... and from any licensing of such products... shall be deposited in the U.S. Treasury."[1] This would seem to remove all economic incentive for the potential private sector partner interested in new arrangements for production and distribution of book-form or electronic products.

However, there are a number of parties quite interested in new forms of production and styles of distribution. For example, if the Government ever decided to cease printing the Tide Tables, there are a number of printing houses eager to fill the void. Of course they would only produce Tide Tables with the promise of economic return. Marginally profitable geographical areas would be dropped. There are also a number of private entities wishing to place the Tide Tables on

electronic bulletin boards accessible by subscription. This leaves unanswered the question of how the Tide Tables would be made available to ships at sea.

As just alluded to, there is an existing and growing cadre of private companies offering tide prediction information. Their products run the gamut from pocket tide tables, office calendars with tide curves, to specialized products for sport fishermen and kayakers, up to and including sophisticated software packages for personal computers. All this tide prediction information is derived from Government sources.

Another new stakeholder for tide prediction information is a growing industry of electronic nautical chart makers and Electronic Chart Display & Information System designers. These products would be sanctioned "for navigational use" by international maritime standard setting bodies, of which the United States is a member, and so it is very much in the Government's interest to support them.

Users

The utility of tide prediction information goes well beyond navigation, and more uses become apparent as society's needs evolve. The National Ocean Service has sought to quickly recognize these new functions and users and encourage them with new services.

The National Ocean Service supports society's growing environmental concerns with new customized product combinations tailored to each requestor. These answer regional and city managers seeking data sets supporting their research and policy needs. They are also used by consulting firms specializing in environmental studies on their own or on behalf of public decision makers.

The call for specialized data sets in response to unique needs continues to grow. Engineering and construction firms use our data to correlate with past structural failure events and to wisely plan future designs and operations. Law enforcement agencies seek information as

input to criminal and civil cases. Government agencies at all levels now use tide prediction information to enhance the successful outcome of programs for the benefit of their citizens. Universities constantly use the information in planning future field work and to correlate with their own data sets.

Requests for "certified tide predictions" for presentation in courts of law are an example of change instituted from within the National Ocean Service by making imaginative use of simple technologies and attention to customer needs. Certification times were cut from as much as two weeks to two days by taking full advantage of the National Ocean Service's consolidation at its new Silver Spring campus. But a more important value was added to this product by sending a draft certification just a few hours after the request. The advantage to the customer was an immediate opportunity to evaluate the information, modify the request if necessary, act on the information in preparation for court, all the while confident that the true "certification" would be in hand within 48 hours.

New and customized data formats support other users. The National Ocean Service works closely with printers seeking to create products for an ever more diverse clientele. Educators at all levels need customized products to use as examples in teaching and to plan student field trips.

The National Ocean Service actively considered all of these users and stakeholders when the time came for change.

A Time For Change

As the midpoint of the development cycle for the 1996 Tide Tables approached, the word was received that the funding to print the book form of the Tide Tables would no longer be available. Though the announcement came suddenly, it was in fact an event whose time had come.

National Ocean Service management had already been giving consideration to more

fitting roles for Government in the creation of the tide prediction information. In that light it had already begun to give thought to a range of potential new relationships with its users, stakeholders and untapped partners in the private sector.

The lack of Government funding to print the Tide Tables was indeed a significant event. It had important maritime safety and legal aspects. It represented a potentially new balance in the commercial market. And finally, there were the implications arising out of the perception of the event in the eyes of the stakeholders, users and other interested parties. All these issues required enlightened and tactful leadership to effect a well regarded outcome.

The National Ocean Service was capable of effectively addressing these sometimes conflicting issues because of its continuing close and informed relationship with interested parties. It was able to draw its stakeholders and user community into a new future reality while minimizing the disruption to each. It was able to quickly reach out to new partners in the private sector under this special circumstance because of its experience with private partners in related subject areas.

The precipitous withdrawal of funding to print the Tide Tables forced the National Ocean Service to adopt revolutionary methods of meeting user needs. It enabled the National Ocean Service to put into practice in one more area of its authorized expertise the belief that the customer's needs must define the value of information as well as its format, time and place utility. As customer preferences for information content, style and delivery become increasingly more diverse, no one format or media type will best serve the maritime community. Furthermore, no one organization is capable of serving all customer preferences as expressed in the marketplace.

Lessons Learned

About six months lapsed from the time we first heard news about our lack of funding until we

and our partners had defined our future course. Obviously this period was the most unsettling and disruptive, and from it we acquired a few lessons.

Move forward. Our internal deliberations to define the scope of our funding situation and explore possible new printing and distribution scenarios for the Tide Tables was very focused. Spend your energy concentrating on defining and resolving issues that have a potential impact on your future maneuverability. Issues that defined the past are almost irrelevant. Someone might suggest that an understanding of the past provides perspective for the future. While this may be true, do not let it also become a trap to remaining unnecessarily enmeshed in practices of the past.

Information is only useful when shared. One must do everything possible to shorten the awkward and destructive time of uncertainty. This means do your in-house homework as quickly as possible and bring it to resolution. Once you know where you stand, even if you do not yet know in detail where you are going, share this much in as tight a time frame as possible with all potentially interested parties. They will find out anyway and it might as well come from a single authoritative source. From the range of responses to your initial contacts formulate as quickly as possible your future course of action and share it.

Our internal and external deliberations involved many parties. Multiple conversations took place with, for example, the Defense Mapping Agency, the U.S. Coast Guard, the Government Printing Office, the NOAA and Department of Commerce General Counsels, and finally the NOAA Chart Agents and the private sector value-added-retailers of tide prediction information. Of all the parties in question the last two had to be treated with great impartiality.

With each party we had to go through the same process of education, reaction, negotiation or exploration and acceptance. Initial reactions to the situation ranged from disbelief and anger to acceptance and delight.

Touching base with each party was absolutely necessary to defining our future course, but each also added a delay to defining that course. With delay came the opportunity to add to the growing suite of rumors. Furthermore, angry respondents required additional consultation and coaching to help them see their place in an as yet to be defined future.

Special attention should be paid to your oldest constituencies. Their fear is what they might or will lose under the new arrangement. Where possible show them how they can participate in the future arrangement. Show them hidden opportunities in the new arrangement. It probably will not be their old style of doing business and the financial picture may be different. It will be uncomfortable for them, but they will appreciate learning of it and exploring it with you.

Special attention must also be paid to the newest of your interested parties. Ours were private sector value-add-retailers and their overriding concern is that they have the same opportunity to play in the new arrangement as their competitors. In this regard we were very successful in addressing their concerns.

One is advised to keep detailed event and communication logs as documentation for the above. In the normal course of addressing a major change they will daily prove invaluable in reminding yourself of what was said to whom and when. In the event that your management of the change process is challenged they will serve to help reconstruct events.

Finally, an observation on using the valuable resources at General Counsel. It must be remembered that their expertise and perspective are of a legal nature. Yours might be programmatic or technical. Both must be combined to give you complete solutions in your new and changing situation. Seeing and following only one of those points of view will lead to unsatisfactory results at best. And those unsatisfactory results will, in all probability,

require you to revisit the question with the attendant loss of time and opportunity.

Two Years Later

All of the above transpired in 1994-1995 as we faced publication of the 1996 Tide Tables. Our solution was to publish the tide prediction information on CD-ROM. The National Ocean Service then worked very closely with interested private printers to help them complete arrangements to print and distribute the Tables for retail sale and public use from the CD-ROM. Today the National Ocean Service continues in that role.

The National Ocean Service occupies a unique position vis-a-vis tide prediction information. It is the Government agency authorized by Congress to engage in the observation, analysis, creation and dissemination of such information. This role is recognized by the community of nations and international standards setting bodies. For example, the National Ocean Service is the U.S. focal point for the annual exchange of tide prediction information between nations and the maintenance of the international tide prediction database.

Closer to home the National Ocean Service continues to act under its policy that Government's business is to collect and analyze scientific observations to create and maintain a database of basic tide prediction information while its presentation in user-friendly forms is best left to the private sector. One inherent and key role for Government is the quality control of that tide prediction information. Good quality assurance of the source data enables the value-added-retailer to exploit the full range of potential products and the customer to use them with confidence.

The World Wide Web is a new area where the National Ocean Service can play a constructive quality assurance role. The recent proliferation of tide prediction information on the Web has clearly brought this to light. As it has done successfully before, the National Ocean Service will use its knowledge of the

marketplace, its customers and its partners to
address this new situation.

1. Excerpt from United States Code, Title 44:
§1307 (b)

The Bureau of Justice Statistics' Rules for Living on the Information Superhighway or How Simplicity, Service, and Attention to Customers Can Help Hustle Tons of Ripe Digital Bananas

Tom Hester
Bureau of Justice Statistics
Washington, DC

The Bureau of Justice Statistics (BJS) received a wakeup call about 4 years ago.

We're a small statistical agency employing fewer than 60 people. About two-thirds of the staff are devoted to analyzing numbers and writing or producing publications. On average we publish a document a week–a book, bulletin, or fact sheet. Our budget goes primarily to collecting data, and it's not a large budget.

And the budget starts and ends my brief story today. In 1993 we incurred a postage bill that had ballooned to nearly the size of Minneapolis. The publication dissemination budget line had to be shored up, and we had to take a hard look at our future.

The mailing costs were the negative side of our success. We had a great, aggressive clearinghouse that shared a commitment to our legislative mandate: We were to provide as much accurate, on-time statistical information about crime and criminal justice as possible and we were to do this at no charge to the user.

The debate student who called got a sheaf of reports about capital punishment. The journalist received personal attention and a thick packet of materials. The neighborhood watch captain went on our victimization mailing list. The thousands of agencies and men and women who contributed to our

surveys and censuses received the books that contained the answers they had given us; these were our only legal payoff for cooperation, and it was the least we could do.

But we had to cut back. We killed the glossy quarterly summary of publications that at its height had gone to tens of thousands of homes and offices. We made readers order each of our thick books of tables rather than receive them automatically. We substituted executive summaries for the numerical behemoths we previously shipped to everyone. We scrimped on printing, and we began to think about digital libraries.

The BJS Electronic Library was what our planning group called the public access facility that we wanted to create. The more visually oriented among us nominated Digital Gallery, but they lost. The concept of this BJS place was a walnut paneled reading room. Overstuffed leather chairs. Sherry at 4 o'clock.

When we determined that a couple of gigabytes would store our back list on-line, we recognized at once that our electronic library would not be the Alexandrine national library that Transportation or Patents or Energy must maintain. There were ways we could have dumped loads of numbers onto the Web site, but from the moment of conception the BJS library was to be a place where the user could find the right document right away. Unable to afford or even to find the search engine that

we wanted, we were committed to effective design.

That early pledge to ease of access kept us on course, but not all our best-laid plans ended so happily.

In those days, excitement surrounded Internet components named after small burrowing animals or comic book characters. What we wanted for our digital facility, we decided, was a gopher site. Months passed. By the time we actually dug our rodent den, few customers wanted to use it, and it now stands forlorn.

This last example of planning leads us to the puzzling BJS First Rule for Living on the Information Superhighway: What we plan we ultimately don't want to reach so we should plan really carefully. This rule is a kind of variant of the curse: "May you get what you hope for." Lurching ahead without a well-established, thought-out plan is foolish. In today's technological terrain, however, resolutely following a considered plan to its bitter and dead end is equally silly.

Here I must interrupt my story to tell you of some of the advantages that BJS enjoyed. We did not have to build a electronic library fit for the Trump Palace because we helped to support organizations that were also serving our customers. BJS can be seen as a kind of network.

I have already mentioned the clearinghouse managed by Aspen Systems: the National Criminal Justice Reference Service (NCJRS). Besides having a corps of experts responding to calls on 1-800 lines, NCJRS operated a bulletin board for distribution of our reports.

Three other national or international criminal justice professional groups that we support in part were also offering computer bulletin boards. So, for chatty folks and for the technically proficient, willing to set parity bits and be patient with their 14.4 modems, BJS was at the ready.

For the lovers of encyclopedias and for reference librarians everywhere, The Sourcebook of Criminal Justice Statistics joined us on-line from Albany, New York. BJS customers with file readers able to copy a table to the clipboard could import contents directly into their documents.

In the thin atmosphere of Ivies and the Big 10 and major research universities, BJS was providing data files for analysis through the National Archive of Criminal Justice Data, at the University of Michigan. Member universities could acquire our data on 9-track tapes, and their students could swing mainframes to crunch our survey results.

From my little catalog of dispersed resources, you can see that we were still lacking. We wanted to be omnipresent, with the apposite statistic at just the right moment. Instead, in the railroading lingo of the pre-asphalt epoch, we were sitting on a siding far from the trunk line of information.

At the time, all about us, major Federal agencies were throwing what seemed to be terrabytes of information across the telephone system. The BJS task force members could not even access those agencies hurling all those data because the branch of Justice where we reside had not yet gained World Wide Web service. Our capable task group chair, Marianne Zawitz, who has done the most to make the electronic library a reality, would surf the Web at home and then bring us reports, like a spy returning from the unknown territory we were proposing to enter.

But in on-line capacity we at BJS weren't much different from the people whom we try to serve. We have an enforced modesty and frugality. The criminal justice community and people wanting criminal justice statistics do not belong to the Sharper Image set, living fast on the cutting edge. I suspect it's as much a question of costs as desire, but if you live in a house fitted with Shaker furniture, pretty soon you come to appreciate the function and good design of simplicity.

Our director had a colleague who was living in Mexico and dialing in with his 1400 baud modem on his laptop with the graphics turned off. The constant question while we designed the first pages was what would our Pueblan correspondent see if he accessed BJS on-line? Such a consciousness of limitations continues to guide us in how and what we offer our digital users.

About a quarter of the people who ask for our publications are State or local government employees: the policemen, sheriffs' deputies, and budget analysts; another quarter are in school as students or teachers; another quarter are members of organizations–businesses, community groups, foundations; and the last quadrant are a mixed group–the general public, the media, Federal employees.

Interestingly, less than 10% of the total audience–the journalists and our bosses on the Hill and in the White House–captured and still capture a large part of our attention, but the Web has certainly reduced the distance between the President and a third grader preparing a report on crime in his neighborhood.

I try to speak authoritatively about the borrowers from the BJS electronic library, but don't let my tone fool you. We send out about three-quarters of a million paper-and-ink reports a year, and on average nearly a thousand people a day visit our site, but I still have only the dimmest notion of who our readers are and what they want from us.

This is BJS's Rule Two for Living on the Information Superhighway: We admit our ignorance, we try to correct it, but we don't let it prevent us from acting.

One valuable source of information at the pre-Web-site stage was a reader survey sent to the whole mailing list. From about 36,000 forms sent, we received almost 6,000 responses. In fact, three and a half years after the survey, I continue to receive mangled questionnaires.

In sum, our readers told us that they belonged to the fax generation. Two-thirds of them lived at the corner where paper-and-ink and electronic impulses cross, and when we acted on that knowledge, purchasing a fax on-demand service, we made one of our wisest decisions ever in terms of service and workload. And when we substituted the mass-fax for a 32-cent mailing of newly released reports, the savings were considerable. As you know, the fax often smears illustrations, distorts fonts, and renders some documents into murky blurs. But our readers love it. They like the convenience and speed of getting precisely what they want. It's their technology.

Hence, a corollary to Rule Two just cited: Knowledge makes for better decisions than ignorance, always.

Our readers also told us that a healthy majority–about two-thirds–had a computer. But in 1994 there were a lot of lonely computer users: too many of our potential library browsers owned an ancient version of WordPerfect. Fewer than 1 in 10 had a modem. We understood from our survey that our digital library would not replace the paper-and-ink publications. Rather, we would expand our audience.

As progress unfurls we discover that we were right and wrong. We captured new readers, especially from the White House Web site because we provide the crime statistics for the Social Statistics Briefing Room. Our old audience, however, is adding modems to its computers. We know this because, like air traffic controllers, we guide them over the phone to the requested links on the Web. They appreciate Marianne Zawitz's genius at keeping the site simple and direct, with none of the labyrinthine embellishments that are the curse of World Wide Web excesses, but they still get lost. Tell you the truth, so do I sometimes.

Our first metaphor was an Electronic Library. Walnut and leather and sherry.

But there were issues that never belonged in a library with a antique globe and vellum bindings, and we had to address them. How were we to account for documents that we updated on the Web without a paper trail? We decided to mark all of our Web documents where revisions occur and to record in a database each revision made. We anticipate that someday we will be storing all site contents on CD-ROMs.

And how are scholars and journalists to cite what they find on our Web site? We are committed to constant maintenance and improvement. While we will try to preserve URL's to specific documents, sometimes both the equipment and the design conspire to make bookmarks in perpetuity an impossibility. So we are suggesting that citations include the date of a visit, our domain and site names and the site category, omitting the specific document designations that are likely to be sacrificed. We are keeping a record of Web document names for anxious researchers in need.

While working in the library and still wrestling with the budget, we came to a new understanding of what we wanted our Web site to be: a digital library and a digital hothouse. Glass and light and air and the smell of growing things.

According to my best reading of the Web analysis of our site, our visitors want the simplest versions: given the choice between a PDF file and an ASCII file, they choose ASCII. Despite the sacrifice of readability and context, the typical Web user wants the easiest document to snatch, though some are probably checking the ASCII contents before they go through the more elaborate procedure of accessing a PDF.

I don't applaud the preference for ASCII, but I am happy that we offer the choice. I am also happy that our customers have our report with the Department of Justice press release and last year's version of the report and access to the original data at Michigan and dozens of links that can add meaning to our report. All this

our customers enjoy as long as we don't stand in their way.

Here I feel another BJS Rule coming on: Number Three for Living on the Information Superhighway: The spirit behind the Henry Ford option for Model T color–any color you want as long as it's black–does not apply to the Internet. Only superlative selections at supermarkets on the superhighway will survive.

That rule brings us to the BJS Web site today. We open our new Electronic Greenhouse in late April or early May, and those familiar with our site will find the same handsome simplicity and deep lists. All the paper and ink publications, as Adobe and ASCII documents, will be offered. But more recent, high-interest information will be placed in HTML on the Web pages. To find key facts, a Web visitor will not have to access a document first but can go directly to the desired statistics.

There will also be the new Internet-only publications. From the start we have had spreadsheets for the larger tables published in paper and ink. Now we have spreadsheets too large to fit on any paper smaller than half a basketball court. The interested user can copy or download the data of interest and make his or her own graphs or tables.

The Sourcebook is on its way to losing the book part of its name as it becomes a site that constantly updates contents as they are available. At paper-and-ink publication time the Source staff will copy the PDF files into a CD-ROM, and both the CD and the paper version will be distributed.

Remember when I noted that the budget would reappear in our story? In the past we published documents of limited interest that contained every detail of a census, spilling like an oil tanker across a thousand pages. We cannot afford to publish such documents anymore, and so their contents are going directly to the Web without the dusty detour to paper. For the readers without Internet access, we are offering to fax or to mail all the

numerical tables that they need. It's a case where the saving of a quarter-million dollars inspires us to provide individualized services.

To help readers and archivists keep up with our publication series and the welter of old publications, the new site will offer a common-sense guide that will take the user to the most recent report in a series.

After the greenhouse is constructed, I expect that we will start using more CD-ROMs to record the data and publications for our customers and posterity.

I also anticipate that we will soon have a database in place to allow Web visitors to create unique tables. I believe it's called "on-the-fly."

Soon we will begin to use the Internet to survey the prosecutors' offices and police stations and other data sources. Our Internet site will receive as well as send information.

After all these changes the Greenhouse metaphor will have lost its value, and perhaps a Daedalus image will take its place.

This conclusion leads me to the last BJS Rule for Living on the Information Superhighway: The trip is better than the arrival, so it's best to be always leaving.

Moving From Print to Electronic Dissemination: Why, When and How Patent and Trademark Office Experience
Summary of Remarks

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The U.S. Patent and Trademark Office (USPTO) is an Executive Branch agency under the U.S. Department of Commerce. I am pleased to be sharing the podium with colleagues from sister Commerce agencies, Census Bureau and NOAA. The USPTO is located in Crystal City, an Arlington, Virginia "neighborhood" located next door to National Airport in the Washington, DC area. You are here at the National Airport Hilton. You are on our turf! I hope you take the time to tour the public patent and trademark search facilities which are included on your overall conference schedules. You should find them fascinating facilities... but watch where you glance or sit. Our patrons like to maintain the strictest confidentiality in their work!

Fundamental to the information dissemination policy of the USPTO is the underlying purpose of the U.S. patent system. In return for an exclusionary monopoly bestowed on an inventor by patent protection, an inventor fully discloses the invention to the USPTO, which in turn prints and disseminates this information. This sharing of technology implicit in every U.S. patent granted, spurs economic growth by providing information which is used for a variety of purposes, including but not limited to competitive intelligence, research and development, and fostering creativity leading to the development of new inventions. Clearly the quality of our lives is impacted directly by a strong patent system, so getting this information out to those who need it is an imperative.

The USPTO is a Federal agency that has been completely user fee funded since 1991. The USPTO receives no taxpayer dollars. Various "biases" have been expressed by today's panel members thus far in regard to information dissemination. With our budget supported entirely by user fees, the bias of the PTO is our users, both current and potential. In recent years, the USPTO has actively undertaken a series of customer focus sessions with its many and varied user groups, and has administered a series of surveys to evaluate our current array of products and services, and to determine what new products and services our customers want and in what format they require them. In the Commissioner's Annual Review, information dissemination is not defined as our mission, but as our business. Patent and trademark filings do vary from year to year, so fees taken in from these filings also vary. This most certainly impacts decisions made about the USPTO's information dissemination policy as we attempt to meet the needs expressed by our users.

To this end, the USPTO maintains a diverse portfolio of information products supplied in a variety of formats to its many users and customers. The USPTO's Information Dissemination Organization's Catalog, distributed via GPO's Federal depository library network, for which you will find a flyer on the handout table outside, outlines this portfolio. In the Catalog you will find listings for our CD-ROM products, magnetic tapes, document supply services, and Internet

services. Our pricing philosophy is based on cost of dissemination. We have a number of customers who buy our data, add value, and offer the information for a wide variety of prices, including free!

A foundation for the USPTO's information dissemination strategy is the nationwide Patent and Trademark Depository Library (PTDL) Program, a program which had its foundation in 1871 with the distribution of printed patents to libraries. This Program now supports 81 member academic, public and state libraries, most of which are also GPO Federal depository libraries. The PTDL Program provides source documents, training, toll-free lines, equipment, access to specialized databases not available to others outside the PTO, and onsite support to its network. The USPTO also provides information to GPO depository libraries through the provisions of Title 44. There are exchange agreements in place with foreign counterparts to the USPTO. In other words, the USPTO pushes its information out the door in a variety of ways few truly know all about.

As most of my fellow panelists have already alluded to, the bottom line in determining information dissemination mechanisms is to achieve the right balance of cost versus customer. What follows is one example of how the USPTO moved from print to electronic format. The USPTO printed and disseminated printed patents to PTDLs from 1871 to 1982. Patents issue weekly on Tuesday. Every week for over one hundred years, the USPTO would print copies for PTDL distribution, box them and pay for shipment. By the year 1977, PTDLs were receiving 4 to 5 boxes a week. These boxes were densely packed and very heavy, and were about the size of a typical GPO depository shipment... in other words, an expensive shipment. In 1978, the USPTO began to explore microfilm for distribution of depository copies as a more cost effective means of distribution. By 1982, all PTDLs agreed to accept microfilm over paper copy. Many were quite anxious to convert for space reasons. But the key to the

success of this transition was the time the USPTO took to achieve buy-in with the PTDLs prior to conversion. The conversion began as a voluntary conversion, but by the time it evolved to a mandatory conversion, the reasons were sufficiently clear to the PTDLs, and the replacement product was high quality.

The next conversion, from microfilm to CD-ROM (the product known as USAPat) is currently underway. Again, the reasons for this migration in format are clearly for reasons of cost. Again, the transition time is over a long period to achieve buy-in from the PTDLs and to build a quality product by the time the transition is complete. The success of this transition is still an unknown. But if the USPTO does a good job in building a product which the PTDLs find acceptable in their role as primary service providers for the USPTO, the transition should be relatively painless. It should be noted that conversion from paper to microfilm to CD-ROM only impacted the PTDLs and our foreign exchange offices. The USPTO continues to print paper patents for the patent examiner search files and the public search files.

The USPTO has yet to completely replace a printed source document or publication with an electronic only version. Instead, the variety of its offerings have increased over the years in direct response to user and customer needs and have been made possible by new technologies (made possible, incidentally by the existence of a strong U.S. patent system!). The USPTO is in an enviable position of having a good idea of who its primary users are, and how to get in touch with them. The goal of the agency is to balance its limited resources with the information needs of its users and customers. In doing so, it relies heavily on the PTDL network to provide public access points for this vital information across the country. Because the agency is so directly accountable to its users, changes in how information is provided are always done in consultation with these users, and always keeping the balance of cost versus customer in mind.

Bibliographic Control in an Electronic FDLP: Problems, Practices, and Policies

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Let me start off by saying: I am not a cataloger, but I play one on GOVDOC-L.

When I was asked to provide some insight into the "problems, practices, and policies" of providing bibliographic access to electronic resources, I was reminded of a joke by Mr. Fred Allen, an old vaudeville comedian, who wisely noted:

> A conference is a gathering of important people who singly can do nothing, but together can decide that nothing can be done.

Of course, he adopted his stage name, Fred Allen, to honor the American Revolution hero Ethan Allen–who, he noted, was no longer using the name.

Fortunately, as we have heard from the first session's presenters, providing bibliographic access to electronic resources is becoming a reality as more and more sources are migrating to electronic only access. In the world of Government documents, this issue is not a new topic. There are some of us who are old enough to remember the receipt of good ol' Census Test Disk No. 2 in 1989. Of course, that was one of the first instances that we noticed the dangers of fugitive electronic documents. Did anyone ever see Census Test Disk No. 1?

GPO has been cataloging electronic resources since 1989 when agencies began using the technology to distribute information. In fact, if you look in Administrative Notes (v.10, no.23)

for November 15, 1989, the GPO proudly announced:

> ...the Interior Department's CD-ROM containing SLAR (Side-Looking Airborne Radar) has been cataloged by GPO staff under OCLC number 20444603. The record, produced on October 5, 1989, contains a detailed description of the item which is titled "Joint Earth Sciences (JES-2) Demonstration Disc." The SuDocs class for the disc is I 19.119:SI 1.

This was page one news!

Why would that be such a big deal? Now, we come to expect the CD-ROM and floppy disks as part of our Monthly Catalog and that they have SuDoc numbers assigned. But, some of you may be as old as me and remember when we had the famous "Technology Tea" in 1990 as part of the Depository Library Council followed up by a survey of libraries (see Administrative Notes, v.11, no. 26) in which the GPO asked us: "Do you want everything even if it doesn't have technical documentation and software?" We said: "YES, we want everything, even if it doesn't have technical documentation and software!" And the GPO sent it, and we said: "HEY, where is the technical documentation and software for the TIGER files?" But, I digress.

As we have all heard, the Federal Depository Library Program has been mandated by Congress to move into an Electronic Federal Depository Library Program in the next five years. Or is that seven? Anyway, fear not, I won't go into the history, politics, and

concerns of that part of reinventing government. And, as we know, a number of titles have migrated into electronic only format, a lot in CD-ROM as well as our friend, the Internet. Sorry, but I just have to throw in some more history for you.

In 1994, the 3rd Annual Federal Depository Library Conference included an Internet panel discussion in which Ann Miller, now of Duke University, spoke about "The Internet and Academic Libraries." Ann said:

> But slowly, as products have appeared which allow a little more organization of the material available on the networks, we have begun to use the Internet as a ready reference source and perhaps even a supplement to our local collections. I say supplement because there is still a way to go before I see the Internet as a complete replacement for local materials.

Part of this panel included Maggie Parhamovich Farrell, now of Montana State University, who presented a talk entitled "Internet Resources: U.S. Government Information." At that time, all of Maggie's overheads consisted of gopher sites. Three years later, we consider "gopher" to be out of date. Even Grace York of the University of Michigan (another panelist) has recently announced the migration to the World Wide Web of her resources. Of course, Grace had already predicted in her talk that:

> Gopher will be replaced, at least in part, by Mosaic and Mosaic by another system and yet by another system.

You may ask yourself: why is she reading old Administrative Notes and old Federal Depository Library Conference proceedings? Looking back from 1997, it seems almost "silly" to re-live these past life experiences. But, my point is that as government information specialists, the issues of bibliographic access of electronic resources are not "new" to us. Even if you are not doing the cataloging, you need to understand what is going on behind the scenes and be assertive

enough to make your voice heard in your library. After all, bibliographic access is a public service issue. And you cannot just "assume" that the people in the technical services (or in other areas of public services for that matter) are aware of what has been so "obvious" to us for the past eight years–even longer for those who knew about all this FTPing, gophering and such back in the "old days."

If your library will never ever buy an electronic journal before you retire, and you load the GPO records, via Marcive, OCLC or whoever, you may be receiving cataloging records with URLs. What is the location code? How will they show up in your OPAC? Will you say: well, this is just something that we are not going to deal with at our library, we'll just delete those that have that nasty 856 field. And then your patron may walk up to your OPAC terminal and see that you have the Census of Population from 1790-1990, but they are looking for the Census of 2000.

If your patron doesn't ask the right person, they are going fill out an interlibrary loan request or drive downstate because they "know" that the University of Illinois has everything and Northwestern doesn't have diddley. Because, the patron may not "know" it's only on the Internet and they are just going to assume that your library doesn't have it, just like all those other documents prior to July 1976. Even if your library is not buying the GPO tapes, your collection is migrating to the Internet and your patron may find those URL records on the SilverPlatter CD and ask you what it means. See the Administrative Notes Technical Supplements or the University of Memphis Migrating Titles page < http://www.lib. memphis.edu/gpo/mig.htm > for living proof. Or you may think: hey, I'm only a 15% depository, this won't affect me. But, perhaps you are a full State depository. We just received notice that the Illinois Administrative Code from this edition forward will only be available via CD-ROM.

The reason that Northwestern University (NU) Library has developed a policy for

bibliographic access for electronic resources is not just because I keep forwarding to the Head of Serials copies of statements from journals that read: "last issue, available only on the WWW." (Although, I admit it did sort of push enough buttons in Serials to make them realize that this was going to be a problem since I wasn't going to leave them alone). The reason that we are dealing with the issue is not just because of government publications. There were other problems in the Main Library:

1. CDs/Floppies that accompany books: Should they stay with the book? Should they circulate? How do we mark the pieces? If they are not on the Library LAN, Where should they be housed?

2. Journal subscriptions on the WWW: How do we let people know that we have an electronic version?

3. What about resources that we create at NU such as electronic text?

4. How do we catalog them? Separate records? Every format in one bibliographic record? What about those materials that are available only to the Northwestern Community due to site licenses? Do we assign a call number?

As these questions were being asked and more and more electronic resources continued to flow into our library (not just from the Federal Government), Northwestern's Assistant University Librarian (AUL) for Technical Services formed a committee that became known as BAER (Bibliographic Access to Electronic Resources) in February 1996. (I give the AUL, Roxanne Sellberg, all credit for a brilliant acronym). As Roxanne pointed out, she wanted to create a policy rather than a tradition. The committee consisted of the AUL and the Head of Bibliographic Records Service (i.e., monographic cataloging) as co-chairs along with the Head of Serials Cataloging, the Transportation Library Cataloger, the Head of

the Science and Engineering Library, a main library original cataloger who was the de facto electronic resources cataloger, the Reference Electronic Resources Coordinator, and myself. It is important to note that the committee was a library-wide committee and not just a technical services committee. Because, as the Head of Serials cataloging told me one day: "we don't care where it goes, we just need to know where it is going!"

The very first time that BAER met, I was excited: finally, we are going to deal with this migration of sources to the Internet! I pulled together my remarks from the Superintendent of Documents and Gil Baldwin at the 1996 ALA Mid-Winter GPO Updates regarding migration and classification issues and Tad Downing's updates from the Cataloging Branch as well as issues that had appeared on GOVDOC-L and one of the first examples of a cataloging record with a URL: The Federal Bulletin Board. I had my pile (despite the electronic world, a few trees still give their lives for the electronic migration process) and was ready to talk. Then I realized: these non-government librarians were just now dealing with issues that I have been dealing with since 1989. I was going to have to slow down. Be patient. Bite my lip. Try not to say snide things.

One of the first questions of bibliographic access to electronic resources on the Internet had already been raised in the documents community as early as 1993 (for the historians in the audience: the first I found on the GOVDOC-L archive was on March 1, 1993 by Cathy Dwyer at SUNY Albany and the only response to her query that I found was from Duncan Aldrich at University of Nevada, Reno). These people were just now trying to deal with the fact that all these CDs and floppies were coming into the library. Do they stay with the book? How do we mark the pieces? Where do we put them? Do we circulate them? I already had over a thousand CDs and floppies in my collection. What was the big deal? But, in the non-documents world, this is just now becoming a big deal.

We met every Tuesday from 9 to 11 a.m. Yes, every week, from February until December 1996. We had "testimony" from various library departments as to what they wanted to see in the OPAC (e.g., Preservation, Media Center, Social Sciences Data Services, Electronic Text). We gathered information from other institutions that were already cataloging electronic resources (including the University of Virginia, the University of Michigan, and Florida State University). In March 1996, I made a call on GOVDOC-L asking if anyone wanted to get together for an "informal" discussion of BAER issues. Some of you may have been one of the seventy-five that showed up in April during the 1996 Conference. You may be surprised to hear that when I reported back that all these government documents types showed up to this informal discussion, that the NU BAER committee was surprised that so many of us "non-cataloging" types would be interested in the issue. I explained it is a documents librarian tradition to make technical service nightmares come true.

I gave them a copy of the GPO Cataloging Guidelines from the WWW. A few were pleased and surprised that GPO already had developed a policy and actual implemented procedures. I pointed out that the GPO **had** to create a policy because while the subject bibliographers may pick and choose what electronic products they want to buy, the GPO has to take whatever format they receive from the agencies. So, if things are now on the Internet, there is an expectation and requirement that the GPO will provide bibliographic access from those of us in Federal Depository Library Land. In fact, we are pretty vocal about our expectations to catalog and classify the materials. And, the loudest voices were not just from the government documents librarians who are catalogers.

I will spare you a blow by blow about the details of these meetings. Our final report is available on the WWW < http://www.library. nwu.edu/tech/baer/ >. It's interesting to note that in the very beginning, the committee

could not even agree on "the vision thing." Part of the group felt that the OPAC would continue to be the primary source for all types of materials. Others in the group felt that the Internet would be the starting point for all sources and that the OPAC would be a secondary tool where users would locate books and other non-Internet resources. One thing we did agree upon: that as fast as the technology is changing, the next few years will be a transition period. I refer to it as the-never-ending-BAER-committee.

Things we did agree to implement for Internet:

1. For those items that migrate to the Web and retain their same titles, information will be recorded in the bibliographic record, just as GPO uses the same record for microfiche, paper, and electronic.

   Score one for the Documents Librarians who like one record. Again, traditional cataloging at NU creates a separate record for microfiche, print, and electronic publications. But, in the world of "shrinking technical services resources" (read: staff), there is a need to streamline. For many years, the Government Publications Department has added a second copy holding on the same record for different formats.

2. For titles that are available on the Internet, we have created a series of location codes for our NOTIS system:

   govt, int
   afri,int
   ref,int

   All these codes will display the location: INTERNET

The theory behind having departments identified in the staff mode is that if the URL goes "bad", Cataloging will have a "responsible" department to find a new one or to have the record suppressed. If you look at GPO Cataloging Guidelines, they actually

have a section entitled "remote files no longer available" (i.e., dead URLs).

3. URLs will be recorded in the 856 field, which displays in the notes area, and they will be labeled: "Access method."

4. In the call number field, the message will read: "See URL above."

5. For holdings, there will be an 852 field displayed which says: "See Internet for available issues."

Now, these seem like simple, obvious solutions. However, if you get involved in such a project, you will find that everyone has an opinion and we all feel that ours is the right one! And there will be major arguments and arm wrestling over words: is it better to have INTERNET or WWW or World Wide Web? Should the message say: See URL above or See URL in notes above or See WWW address above?

Another part of the NUL BAER dealt with issues for tangible electronic resources (e.g., CD-ROMs and floppies). We recommended creation of location codes for electronic products such as:

ref, elec

which will display in the OPAC:

Main Reference (Electronic).

Prior to this, CDs in the Reference Department would be either Reference or Reference Desk (depending on when it arrived and/or who assigned the location code in Reference). And if the patron didn't notice that the Dewey number was for an electronic product and didn't stop at the desk, they could spend a

couple of hours looking through the Reference stacks and think perhaps it was on the reshelving stacks. Naturally, we have used a govt,elec location code for at least four years. Of course, we could have the same stack search if our patron has only provided us a SuDocs number.

So, where are we at Northwestern University Library Government Publications and Maps Department in providing bibliographic access to electronic products? To borrow a new phrase that is floating around in cataloging circles: we have a "virtual backlog." We have procedures in place and have begun using the new location codes for titles that have migrated to electronic only access. But, at this point, my department is cleaning up the Marcive tape loads. See, you are not behind: we may have invented NOTIS in 1970, but we are now on tape 5 of the 8 tapes ranging from July 1976 to 1995. And we are "ready" for when our current tape load begins for those electronic products with the URL in the 856 field.

As the first speaker for this session, I just wanted to remind you how much you already know about bibliographic access to electronic resources just by virtue of being government information specialists. And I encourage you not to think that "you don't know nothing about birthing no bib records." So, when you hear Carol, Barbie, and Arlene speak about how they do good at their institution, don't think that you are behind–just remember: most libraries haven't done that pre-July 1976 recon of their collections. And use what skills you already have to move your library toward providing access to electronic resources. And if your library won't go, you can at least move your government documents forward.

Bibliographic Access to Government Information

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At the 1993 Chicago Conference on the Future of Government Information, the admonition given to speakers was, "Don't talk long, but say something." That is what I hope to do today.

In the area of bibliographic control of electronic information resources two major questions arise:

- Can this new format fit into old modes of access control?

- Should it?

I do not have to tell you that this is a time of transition. One year ago GPO had no links to Internet resources on their cataloging records. Today there are more than 1700.

Bibliographic control of electronic Government information is a relatively new problem, or opportunity. To emphasize the newness of access, think about changes in your own library. How long has your library had its online catalog? Although it seems as if we have had ours for at least fifteen years, Cal State Fullerton actually came up with an online catalog in December of 1989–just 7 short years ago. We have dealt with profound changes in a very short period of time. And there is no reason to think that there is going to be any let up in the pace of change in the near future.

But, let's get back to the original questions. I think GPO has provided a very creative and responsible answer to the questions. The answer to the first question, "Can this new format fit into old modes of access control?" is "probably yes." With some adaptations of

MARC records, we can take the regular cataloging rules, add some new fields, and provide a reassuringly familiar access to electronic resources. The answer to the second question, "Should it?" is, "We're not entirely sure, so let's experiment with different ways of providing access to electronic resources and see which ones work best."

This attitude is reflected in Pathway Services. As GPO says, "Pathway Services is a suite of tools being developed by the Federal Depository Library Program to direct librarians and the public to Federal Government information on the Internet." "Being developed" is a key phrase here–an honest one and I think an optimistic one. This reflects the attitude that "we are not sure what access tools users need right now; we will try several (not just one). We will continue to develop them and add news ones if necessary."

The newly expanded Pathway Services can be found on the Internet through the Superintendent of Documents home page and the Federal Depository Library Program home page. Pathway Services currently consists of five very different tools for accessing Government information.

The first is "Search a Comprehensive Catalog of Government Information Products (MoCat)" which provides access to cataloging records published in MoCat since January 1994. It is updated daily with preliminary cataloging records that will be edited and published in future issues of MoCat. This catalog allows the patron to determine what depository library closest to him has the publication he is trying to locate. Determination is made by state and telephone area code. (This will make us think

about what we weed!) Actually GPO has taken this problem into consideration and plans to keep only the latest five years worth of records in the MoCat. The MoCat currently contains over 1700 hot links to Government information on the Internet.

The second is "Browse Government Internet Sites by Topic." This provides links to Government produced home pages. The topics are the same that are used in the Subject Bibliography series. This provides a nice continuity for users or librarians with long memories. "Browse Electronic Government Information Products by Title" is arranged by agency and takes you to specific titles, not just home pages. "Search for Government Information on Selected Internet Sites (Pathway Indexer)" provides for users who want to put in a term and see what pops up.

Finally, "Search the Government Information Locator Service (GILS)" is a "decentralized collection of agency-based information locators using network technology and international standards to direct users to relevant information resources within the Federal Government." The Pathway GILS records are agency-produced links to their own information sites. We can see from the five Pathway Services that GPO recognizes the fact that there is no one best way to access Government information in electronic format. I find this heartening. It's just not that simple.

Pathway Services demonstrates GPO's approach to providing bibliographic access to Government information. But, how does all this relate to what we do in our own libraries? Just as we did not think it enough to hand a patron a copy of the Monthly Catalog to find Government publications located in our library, we believe we need to integrate records for Government Internet resources into our own local systems. But providing access to electronic products is not quite the same as providing access to our paper holdings. To answer the question, "Should we add records for Internet resources to our Library's OPAC?" you need to ask, "what is our concept of our online catalog? Is it a guide to what our library

owns or a guide to resources for our patrons? What is the concept of our library's home page and what resources should be linked from it?"

If you decide to add records to your local online catalog for Internet resources, there are some important issues to address. At the Depository Library Council meeting in Salt Lake City in October 1996, a cataloger asked the question "How will the catalogers know what Internet resources to catalog?" The answer is one that is vital to understand. Adding Internet resources to your OPAC is not only a cataloging decision. It is a collection development decision, a public services decision, and a resource allocation decision. The cataloger cannot decide in isolation.

As a first step, you may find that Government information resources provide the catalyst for your library to come to terms with the question of whether to add records for Internet resources into the local catalog. If a library has always received the Current Industrial Reports, don't we need to reflect in our online catalog not only that the publication is no longer being printed, and that it is currently available on the Internet but also **where** on the Internet the user can find the publication? I think the answer is unquestionably yes. If you agree, then you will want to put cataloging records for Internet resources into your online catalog. You should start Internet cataloging with those resources that are the most beneficial to your patrons.

You will also need to think carefully about technical details that need to be worked out. As with any departure from standard practice, you want to be able to collect all of these new records easily and quickly in the event changes need to be made in the future. At our library, we are adding a series note of "Internet Resource" to the record for each Internet resource we catalog. This will allow easy collection in the future.

Once you are committed to cataloging Internet resources, you need to find URLs. There are many ways to locate them. First, you can rely on GPO. There are currently over 1700

records in MoCat which include URLs, and GPO will continue to catalog electronic Government information in the future. Second, URLs sometimes appear on the front or back cover of publications—we always check them! Third, you can browse the Internet, and use the Pathway Services tools to locate materials. Once you make the commitment, you will find yourself faced with interesting questions. I get about two per week like this from our cataloger.

1) Do we catalog Internet resources for items we did not select in paper? (Answer—Maybe. Although we have never selected the Davis-Bacon General Wage Determinations, if a free Internet site existed for it, I would sure add the cataloging record to our OPAC.)

2) If our catalog record says "keep latest edition only," do we discard the last paper issue we have? This one gave me pause.

Even though the questions are difficult, the alternative is not appealing. If you meet resistance in your library to the idea of cataloging Government Internet resources, just bring up the question of serials. Do we really want to leave our patrons with the impression that they can no longer access the Current Industrial Reports? This is what will happen if we close the cataloging record for the paper serial and provide no link to the electronic version. Or do we want to rely solely on a home page link to a current electronic serial that provides no indication that our library holds the previous issues in paper? I don't think so.

I would like to close with some words from Erik Jul, the Manager of the Internet cataloging project for OCLC. Erik is a wonderful speaker. If you have the chance to hear him, I urge you to take advantage of the opportunity. He brings logic to illogical situations, order to chaos, and generally leaves his audience feeling more optimistic about the future than they were before they heard him speak. Erik's advice is "We need despair only if we think cataloging will not change. The applications of computer automation to library functions is far from over. Tomorrow's best solutions will merge from a deep understanding of today's strengths and weakness." And my favorite, "There are really only two mistakes we can make: Thinking that cataloging is **the** solution; thinking that it is not." [1]

1. Eric Jul. "Why Catalog Internet Resources?" Computers in Libraries 16 (Jan. 1996): 8

Bibliographic Control in an Electronic FDLP: Problems, Practices and Policies

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The title of our program is Bibliographic Control in an Electronic FDLP: Problems, Practices and Policies. I would add "promises" to the title of my portion of this program. I think there is a great deal of promise in what we heard this morning from the GPO staff about the URLs they are adding to records. I also think that the "single record" approach described by Jean Hirons to cataloging Internet materials which are also available in paper is an especially good approach to this material.

What I plan to do in the next 10 to 15 minutes is describe the situation at my library (the University of Virginia (UVA), a regional) in reference to our online catalog and cataloging electronic materials, especially Government materials.

A bit of background on the UVA Library system:

We're a large research library: our last milestone was our 4 millionth volume. We are also heavily involved in making information available electronically. We have six electronic centers: the Social Sciences Data Center, the Geographic Information Center (both of which are administratively a part of the Government Information Resources Section) the Digital Image Center, the Digital Media and Music Center, the Electronic Text Center, and the Special Collections Digital Center.

Our library is committed to making the electronic information we produce available via our online catalog. In preparing for this talk I read papers which have been presented

at other conferences by our catalogers, Jackie Shieh and Allison Sleeman, just to give you an idea of how expert our cataloging department is in this area. I don't make any claims to expertise myself, but I do claim to come from a library that's cutting (bleeding) edge in its electronic access to information.

Now for a little background on the Government Information Resources Section of the UVA Library and our online cataloging efforts.

We've been Marcive customers since 1990 when we brought up our NOTIS online catalog. Because we are a regional we have always subscribed to the entire GPO tape file. When we were a NOTIS library we excluded any records which were corrections to older GPO records. In our NOTIS catalog we did not have the ability to automatically overlay records. Subscribing to all new GPO records has its problems. We still have records in our catalog for materials we never received, but are working to delete the records or acquire the material. But we also received records for serials which GPO cataloged as a part of its CONSER activities (I think) like Foreign Relations of the United States, and the U.S. Government Manual. We simply don't have the staff to catalog these important titles (and many more) retrospectively, but GPO's mandate is to do this, which benefits many libraries.

This past summer we switched from NOTIS to SIRSI as our online catalog vendor. With SIRSI we now do have the ability to automatically overlay records. We also have the ability to

simply click on a URL in a record and link to the Internet. At the same time we made the online catalog switch we also began receiving the Marcive shipping list records.

Additionally, we asked to receive ALL GPO records, including changes to earlier records. The theory is that the changed GPO records will simply overlay the previous record and be better and more complete. So we made three big changes at one time.

We of course realized that things might not go completely smoothly. They haven't.

We have had some problems and are still having some problems with getting the overlay process to work properly. However, we feel confident that we will work out those problems fairly soon.

Here's where I come to the "Promises" section of my talk. I think that, for our library, the overlay capabilities of our SIRSI system and the cataloging practices of GPO together offer an opportunity to provide much better access to Government information in our library. However, I will be the first to say that we are just beginning with this overlay process and are still fine-tuning it. We hope that it will work in the long run, but still have a long way to go before we are sure that it will work.

As I said, we are now receiving all GPO cataloging records, both new records and corrections to previous records for both monographs and serials. These updated or corrected records obviously include the records to which GPO has added URLs. Since GPO is already making great efforts to keep up with new and changing URLs for much Government information, it seemed redundant for us to try to do this too. We would much rather take advantage of all of GPO's fine work in this area than actually do the work ourselves!

To date GPO has added about 1700 URLs to its records. Our library's catalog should have almost all of these in our records. Such keyword searches as the following return

records for materials which are on the WWW and have clickable links in the cataloging records:

> Internet and agriculture
> Internet and (government adj manual)
> Internet and (elderly or aging)

Problems that we will have to work to overcome include:

1) Replacing of records means that almost all information added to the record would be lost: is that acceptable or not? It would mean that we would essentially never modify our documents records and would count on GPO to make whatever modifications were needed.

2) What about the problem of getting records for periodicals and serials from Marcive? Will we get too many records which need to be deleted from our catalog?

3) What about "availability" records from GPO? Do we want to continue to get these?

4) Will GPO continue to track URLs?

5) What about agency URLs that GPO doesn't add? Should we add them, knowing that at any load of records our work might be erased by a revision of the record that may or may not contain the information we added?

6) What about other records our library adds to its catalog which might be inadvertently overlaid by a GPO record for the same title?

A final aspect of our library's cataloging of Government information on the Internet is our cataloging of the value added information which our electronic centers produce. As I mentioned, both our Social Sciences Data Center (SSDC) and the Geographic Information Center (GIC) are administratively located in the

Government Information Resources section of the library. Both of these centers utilize Government produced information and enhance it by making it available via forms on the WWW or by combining it with commercially available software. Our cataloging department has been and will continue to catalog such WWW resources as the Virginia Digital Map Library and the value added version of the Regional Economic Information System. The SSDC and GIC will continue to use Government information as the basis for much of their work on the Web. Our cataloging department will continue to provide access to this value added Government information via VIRGO, our online catalog. It strikes me that this is an example of the Government/depository library partnership which we have heard about.

Bibliographic Control in an Electronic FDLP: Problems, Practices, and Policies

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What I'd like to do today is give you a broad overview of what we are doing at Willamette University to add URLs to our online catalog. I don't have enough time to cover everything, so please feel free to ask questions later, either personally, or via e-mail. I should also point out that most of our procedures regarding adding URLs to catalog records are posted on our Technical Services Home Page, and the address is listed at the end of this paper. Let me start by giving you a brief history of the cataloging of Government documents at my institution.

The Mark O. Hatfield Library at Willamette University is a selective depository, selecting approximately 20 percent of items available. For a variety of reasons, we decided against using a catalog record tapeloading service, such as Marcive. In January 1996, we began to catalog all currently received Government documents, working them into our regular cataloging workflow. Our documents assistant received training in copy cataloging using OCLC, with additional help provided by the library's regular copy cataloger. We have selectively cataloged older documents as demand and time allows, but the primary focus of cataloging activities has been current receipts.

Around the same time that the decision was made to catalog documents, the library purchased the Web-based version of the Innovative Interfaces catalog. One of the most exciting features of the Web-based catalog was the ability to link bibliographic records to URLs on the Internet through use of the MARC

field 856. Given my position as both the serials cataloger and Government documents librarian at my institution, I recognized that Government documents offered a good testing ground for this new linking technology. And, given the fact that we were cataloging many documents for the first time, the opportunity to add additional fields to catalog records fit well with our workflow.

I started with doing a little research. After reading up on national standards for using the 856 field in bibliographic records, I realized that at that time there was little consensus on how this new field should be implemented. Knowing how long it can take to reach consensus about standards at the national level, and with the tentative blessing of our head of Technical Services, I decided to forge ahead and develop my own standards for our library's catalog. I'm fortunate to be at a small institution, where I didn't need to convene a committee to formulate policy. I just started experimenting with a few records. The idea was that I could easily undo the work if my own decisions conflicted with national standards. Besides, being a native of Beaverton, Oregon, the home of Nike, has also made me a firm believer in the phrase "Just Do It!"

One of the first decisions made was to focus on Internet sources that had print equivalents. This meant adding 856 fields to the print version's record, and not create new records for each electronic version. At the time, this was a violation of the national standards regarding multiple formats, but I was able to

justify my action by assuring my boss that the national standards would soon be more flexible. Luckily, I was right. Using one bibliographic record to link print and electronic formats, or what is known as the "single record option," is now an acceptable practice sanctioned by CONSER. And now, the most prominent users of this option are the cataloging staff at GPO.

The next decision made was how much information would be added to the bibliographic records, and how it would be formatted. Given that we had not yet implemented the Web-based catalog, we needed to find a way that made sense in both the text and Web version. I've tried to pick out a number of titles for examples that represent different situations. National Water Conditions illustrates the basic format on which we have settled. Viewing the MARC display of the record, please notice the 580 note field. We record Internet availability, the date the URL was last checked, and the actual URL. We've tried to standardize the notes as much as possible, but also allow flexibility when needed. In the 856 field, we use a standard note in the subfield z, in this case "View current issues via the Internet." This becomes the text of the link in the regular public display.

Let me say a few words about the note fields. We use the note field to display URL information because it allows more clarity in the public display than the 856 field in our text-based catalog. It also allows us to record the date that the URL was last known to be functioning. Since we simply don't have the staff time to keep URLs up to date as much as we would like, adding the date gives us some information if we find that the link is not working. Unlike many of my colleagues, the possibility of having outdated URLs in catalog records doesn't bother me that much. I guess I'm gambling again, this time on technology. I assume that library catalog systems will progress to the point where keeping URL links current will become an automated process. In the meantime, we occasionally run reports that pull together all the URLs in the catalog, and

use Web-X-Ref, a link checking software, to identify changed or dead URLs. More information about our procedures can be found on our library's Technical Services Web page. The main point is that we didn't let the possibility of dead links in the catalog keep us from adding them in the first place.

Yet another decision made was not to include any holdings information for the Internet source. In the Innovative system, this means no addition of item or check-in records. The reasoning behind this decision is that the ability of our library to "hold" an Internet source is tenuous at best. We have no plans to archive Web sites, either now or in the future. We simply don't have the resources to do so. Another influencing factor was that holdings records would increase the amount of labor needed to keep the records accurate. For example, those of you who have worked with documents know that the concept of predictive check-in, the basis for many serials control systems, is tough to apply given depository distribution patterns. Trying to apply predictive check-in to the update schedules of Government Internet sources is simply, in my opinion, a fruitless endeavor.

So, what began as an experiment on a few records has grown to the addition of over 350 URLs in our catalog. I wish I could tell you that I've established a systematic process for identifying and adding URLs, but this is simply not the case. I add URLs when I see messages on GOVDOC-L, when I run across a Web site when answering a reference question, and when our documents assistant finds one printed on the publication. GPO's work on adding URLs to records has also accounted for the increase in our own catalog. While we still need to edit the records to accommodate our own standards, it is still extremely helpful to have this information identified by GPO, and I'd like to urge them to continue their current practices.

As for ongoing problems, one of the most difficult is establishing criteria for when to include a URL in a record. At the end of this paper, I've listed some sample criteria to help

in this decision. Unfortunately, I've had trouble applying this criteria in a systematic way. For example, making the decision to link a record to a Web site that is not an exact duplicate of the printed publication requires a lot of intuition and judgment. While it would be easier to restrict links only to exact duplicates, I'm not sure this is in the best interest of library patrons.

Also, developing standards for cataloging purely Internet sources has been a challenge. While I've cataloged a few sites, such as STAT-USA, the need to expand this type of cataloging is increasing, given that there are many Government Internet sources with no printed equivalents. A commitment to cataloging Internet sites has huge implications for labor and workflow, and also has the potential to redefine what we mean by the library's catalog. Needless to say, we have yet to fully work out these issues at our institution.

The final question is, does all this work benefit anyone? This has been difficult to measure at Willamette. We have only fully implemented the Web-based catalog this spring, so we haven't gotten much feedback from library users. Our reference librarians find it very helpful, and given the number of inquiries I've received, I think librarians from around the country also find it useful. What I hope, though, is that I will be able to report back at future conferences that our library users are making use of the information.

As a final word, I'd like to encourage each and every one of you to take the plunge and start adding URLs to your library catalogs. You don't have to be at a large research library. In fact, it may be easier to begin this task at a smaller institution, where policy and decision making tend to be less hierarchical and bureaucratic. To get started, talk to your catalogers. They may be looking for examples to experiment with, and documents librarians can certainly provide ample fodder. Remember also that you don't need to have a Web-based catalog to gain the benefits from

this information. Putting URLs in a note field that displays in a text-based system still provides information to library patrons. Also, if you code URLs in an 856 field now, you can prepare for a time when you may have an opportunity to implement a Web-based system.

Resources

Willamette University's Mark O. Hatfield Library

• Web version of Library's catalog

http://nemesis.willamette.edu/wulib (frames)

http://library.willamette.edu/screens/opacmenu.html (non-frames)

• Technical Services Home Page - Current policies and procedures

http://nemesis.willamette.edu/techserv/

Sample Criteria For Adding URLS To The Bibliographic Records of Government Publications

• URL is easily identified and verified

  Printed on publication
  Provided by GPO
  URL leads to exact publication

• URL provides more current information than print version

  Print publication has ceased and information is only available on the Internet
  Internet site provides up to date information

    Update frequency of information can be determined
    Web information may not exactly duplicate print version

- Information on the Internet has been
  publicized and patron demand is
  anticipated

  Internet site has been publicized in the
  media

  Internet site contains information of
  current and/or lasting interest to
  library's patrons

LC/G&M's Scanning Program: Where We Are and How We Got Here

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When the staff of the Geography and Map Division (G&M) at the Library of Congress (LC) began assessing how digital forms of geographic and cartographic information could be integrated into its collections, we realized the new technologies would require knowledge and skills that we did not possess. It was also clear that the complex and expensive array of computer equipment that was required would be difficult, if not impossible, to acquire through the normal budgetary channels for appropriated funds.

In November 1993 the James Madison Council, a private sector advisory group to the Library, provided $30,000 to investigate the establishment of a corporate support group for the G&M Division. That same month, Alan M. Voorhees, a long-time friend and supporter of the Geography and Map Division and the Library, volunteered to lead the effort in attracting industry support.

The first meeting of this corporate support group, which was named the Center for Geographic Information, was held at the Library on January 12th, 1995, when eight firms committed to being charter members: Autometric, Inc., Environmental Systems Research Institute, Harvard Design and Mapping Company, H.M. Gousha Company, Intergraph Federal Systems, MAGELLAN Geographix, MapInfo Corporation, and Tangent Engineering. Mr. Voorhees, who is chairman of the board of Autometric, a firm engaged in many aspects of the latest geographic technologies, agreed to be chairman of the Center for Geographic Information.

The purpose of the Center is to coordinate the contribution of various resources and knowledge from a wide spectrum of the geographic information and cartography industry. These donations will:

1. Assist the Geography and Map Division in making the transition to the age of electronic maps and digital forms of geographic information through advice, training, and financial support for acquiring hardware, software, and data sets;

2. Facilitate sharing the rich cartographic resources of the Division electronically;

3. Promote the use of electronic forms of geographic information by many sectors of the nation, including libraries, academia, industry and commerce, education, and the general public;

4. Encourage the deposit of digital spatial data sets by American and foreign governments, industry, and academic producers; and

5. Advance the library's publication, education, and exhibition programs in geographic information and cartography.

The charter members of the Center established full membership at $5,000 annually and associate membership at $500 annually. Support from industry members also includes in-kind assistance, as necessary, in providing the Division with appropriate equipment and software to begin developing expertise in the

scanning of maps and the use of software and digital forms of geographic data; deposit of data sets; and participation on committees to accomplish the goals of the Center.

Members of the Center benefit in a number of ways:

1. The Division's expertise in cataloging cartographic materials is shared with developers and users of digital forms of geographic information;

2. Because of its unique position within the Library, the Center can sponsor programs that address specific needs of the cartographic and geographic information communities and provide useful links among these communities and with Congress and other institutions;

3. By working with producers and users of geographic information and digital cartography the Division can ensure that digital forms of geographic information are systematically collected and preserved for the future use of the nation; and,

4. Most importantly, members have enhanced access to the Library's vast collections of cartographic materials, which they are encouraged to use as resource material and to distribute in a variety of value-added formats.

For those of you who might not know, the Library of Congress collection of cartographic materials is the largest in the world, containing approximately 4.6 million maps; more than 60,000 atlases, which contain another 8 to 10 million maps; approximately 300 globes; as well as relief models, puzzles, fans, powder horns, and almost anything else that might have a map on it. In the early 1990s, digital files of geographic data began appearing among cartographic materials deposited by Federal mapping agencies and cartographic software through copyright deposits. The Division's collections now contain approximately 4,000 CDs and computer software packages which are controlled in an

online ProCite database restricted to Division staff.

The Center for Geographic Information has met five times since the organizational meeting in January 1995: June 1995 at the Library; October 1995 at MAGELLAN Geographix in Santa Barbara, California; May 1996, back at the Library; September 1996 in Bellevue, Washington, sponsored by Corbis; and January 1997 in Denver, Colorado, sponsored by Tangent.

As of the first of April the Center's membership has grown to 14 members and 10 associate members. The new members are Autodesk, Inc., Corbis Corporation, Digicolor, Inc., the Hewlett-Packard Company, LizardTech, Inc., Microsoft Corporation, Mindscape, Inc., Rand McNally and Company, and Tactician Corporation. The new associate members are ADC The Map People, CommuniVision, EDR/Sanborn, Inc., Adrian B. Ettlinger, Macromedia, Inc., MapLink, Inc., Navigator Publishing, Spatial Data Institute, and Systems Planning and Analysis

We have made great strides in moving into the new world of digital geographic information in the last three and a half years, largely because of the efforts of our staff and their success in convincing private sector companies that they have a lot to gain by becoming involved in this enterprise. Direct cash contributions to the Center total approximately $100,000, and the value of hardware and software contributed to date is over $700,000.

The first meeting resulted in the first donation. Robert Garber, Chief Operating Officer of Tangent Engineering, now Tangent Color Systems, spearheaded the indefinite loan of a large-format, flatbed, color scanner, a Sun Sparc workstation, and a Hewlett Packard 650 plotter. This system can scan flat items up to 24 by 34 inches, in 24-bit color, at resolutions up to 600 dots per inch (dpi). Of course the plotter only prints at 300 dpi.

As a result of this donation, we acquired the technology to scan maps, and the library's

overall National Digital Library Program (NDLP) adopted our proposal to establish a National Digital Library (NDL) Program for Cartographic Materials, which it has agreed to support through the funding of four positions in the Division to run the scanning program.

In a ceremony in the division in April 1995, Dr. Billington, the Librarian of Congress, and John Kluge, President of the James Madison Council, cut the ribbon on the scanner and participated in the scanning of the first image from the Library's cartographic collections, George Washington's A plan of my farm on Little Huntg. Creek & Potomk, which the first President drew in 1776. The result is so fine that it is difficult to distinguish the scanned map from the original manuscript.

During the first year after the scanner was installed, we scanned several hundred maps in a trial or testing phase and have been working with the members of the Center on technical standards and workflow design in preparation for large-scale scanning projects for the NDL.

Shortly after the donation of the scanning system, the Hewlett Packard (HP) Company made a major donation to the Division and we found ourselves in the enviable position of having the full infrastructure necessary to accomplish our long-range goals. With the HP donation of computer equipment worth nearly $600,000, the Center for Geographic Information and the Division's related GIS Facility both took a giant leap forward.

During a reception in May 1996 to thank Hewlett-Packard for its generous donation in support of the Library's NDL Program for Cartographic Materials, Dr. Billington remarked on the importance of this gift. He observed that, "In helping the Geography and Map Division adapt to the modern world of geography and cartography, the executives of HP who made this donation possible have also embellished the vision of their company's co-founder, David Packard," adding that the NDL Program was started with $13 million in seed money of which $5 million was from the Lucille and David Packard Foundation.

In preparation for the installation of this new equipment, the Division's Reading Room was re-configured to construct a secured area to house the servers and optical storage jukebox as well as the scanning equipment. Access to this area is restricted to selected staff members through the use of a swipe card system to unlock the doors. Additionally, an alarm system with both motion and infrared-heat detectors is used to secure the area when we are closed.

The HP donation will assist in the development of the Division's GIS Facility as well as its NDLP scanning effort. It consists of a Series 9000, K400 Server, featuring four 100 MHZ processors, 1.2Gb system memory, 8Gb internal hard-drive, running HP/UNIX and a SureStore 165ST optical disk jukebox, featuring slots for 128 Write-Once-Read-Many (WORM) or Rewriteable optical disks for a total of 165Gb of storage. HP also donated three 712/100 workstations, featuring 100 MHZ, PA-RISC processors and 192Mb of system memory, running HP/UNIX and a Series 9000 J-200 workstation, featuring two 100 MHZ processors, 256Mb RAM, 2Gb hard-drive, and special graphics enhancement, to replace the Sun Sparc workstation on loan from Tangent for the NDL Program.

Recognizing our need for equipment to provide access to the digital images created for the NDLP and to allow patrons to use Geographic Information Systems, HP donated three HP Vectra PCs, featuring 120 MHZ processors, running Windows95; three HP Pavillion PCs, featuring 166 MHZ processors and full multi-media capabilities, running Windows95; three Envisex P Series X-Window Stations; a 715/100 workstation, featuring a 100 MHZ, PA-RISC processor, 256Mb of system memory, and an enhanced graphics display, running HP/UNIX; two DeskJet 1600CM color printers; a LaserJet 4MV, 11" x 17" printer, and a DesignJet 755C, 36" roll feed, color plotter, with 72Mb of memory.

Following the installation of the equipment we were able to appoint the remainder of our NDL team. We now have five full-time staff

members responsible for creating digital images, a Processing Technician, two Digital Conversion Specialists, a Digital Conversion Coordinator for Production, and a Digital Conversion Coordinator for Systems, who also serves as our WebMaster.

Ten core historic Americana aggregations from the Division's collections have been designated to be scanned for the National Digital Library Program. These include Civil War maps, county land ownership maps and atlases, late 19th and early 20th century panoramic maps of U.S. cities, Sanborn fire insurance maps, and maps and atlases of the District of Columbia. During the first year after the arrival of the scanner we tested the scanning of a variety of materials from the collections, and even though most all of the items scanned have been done as on-demand requests, we have been able to scan examples from most of the aggregates designated for the NDLP.

You have probably noticed that I have been using the word "scanning" rather than "digitizing" in describing these activities. The Division is heedful of this distinction because the images we are creating are raster images that have not been geo-referenced.

Since Tangent scanners had formerly only been used by the military for scanning current maps, the scanning of the Library's collections is their first opportunity to have this equipment used with older materials which present a whole new range of problems, including: discoloration; scanning through Mylar™; atlas bindings which can't be flattened; brittle, disintegrating maps, to name just a few. The handling of our valuable, rare, and often delicate items presents problems all of its own. Once these items are scanned we don't want to expose them to the process unnecessarily. Unfortunately the scanner doesn't seem to understand this concern. While scanning the Division's Agnese atlas the two lenses went out of calibration, resulting in a mis-alignment on each image, which wasn't discovered until the entire atlas had been scanned! Tangent has continued to work closely with us while

we are learning the scanning software and to make the necessary modifications to both the scanner and the software when problems arise and to upgrade the software when improvements are made.

The Scanning Committee of the Center for Geographic Information is advising us in setting up our NDL production of images. The Committee was established during the Center's meeting last May to discuss the workflow and technical issues concerning the images for the NDLP. The Committee has advised us to scan at 300 dpi and to save the images in TIFF format.

In establishing a production workflow we have encountered a number of stumbling blocks in getting the equipment networked using the Library's standard twisted-pair token ring network and processing the images in preparation for making them available on the Web. Moving the images around in this environment has proven problematic. Finding software to manipulate and edit the images which is compatible with the HP/UNIX has been hopeless since most software of this type is written primarily for Solaris/UNIX. When we discovered that Claris had developed Macintosh emulation software for HP/UNIX, we were confident that we would be able to use the Macintosh version of xRes on the workstations provided by HP. Macromedia, one of the Center's members, donated two copies of xRes, the Macintosh version and the WindowsNT version. Unfortunately, we have been unable to successfully load the Claris emulation software.

We have loaded the WindowsNT version of xRes on an Intergraph workstation which is on loan to the Library for evaluation. Since this machine is located one floor above us, we must ftp the image to the Intergraph machine in order to perform quality review and post-processing to rotate, crop, adjust brightness or contrast, and stitch together the TIFF images. Through working with these large images, approximately 180Mb each, and conferring with Macromedia, we have determined that the ideal computer for this

task would be a single processor Pentium Pro, at least 166 MHZ, with 500Mb of RAM, graphic accelerator card, 21 inch monitor, and an 8Gb hard-drive running WindowsNT; or, alternatively, a Macintosh 9600 PowerPC with a 300 MHZ single processor.

Following the xRes processing, the images are temporarily stored on HP Surestore jukebox magnetic optical platters which can each store 1.3Gb. We then compress the image, using a wavelet-based image compressor software called Multi-Resolution Seamless Image Database, or MrSID, which was developed by LizardTech, another corporate partner in the Center for Geographic Information. This software integrates multiple resolutions of an image in a single file which means that when users zoom in they get better and better resolution. Since MrSID stores the images in a seamless manner the user can zoom in and out. A Netscape plug-in which will enable a user to pan, providing immediate access to any portion of a large image as quickly and easily as another, is scheduled to be released in the next few months.

Although MrSID is a "lossy" image compressor, we can compress the image at a ratio of nearly 22:1 and not experience any loss of information, because MrSID keeps track of every pixel from every image. One of the unique features of this compression method is its ability to decompress only that portion of the image requested by the user, which means that images of any size can be decompressed by a user with as little as 1Mb of RAM. Additionally, MrSID builds on each successive resolution by using data already decompressed and loaded, so the user gets immediate access to any location in the image at any resolution.

This software has four components:

- MrSID Compress, to compress images;

- MrSID Retrieve, to decompress MrSID files for use with other software;

- MrSID Viewer, a stand-alone application for viewing MrSID files; and,

- MrSID Distributed Image Database Server for Internet access to MrSID files.

MrSID doesn't require any special hardware to operate. MrSID Retrieve and Viewer operate on any platform, MS Windows 3.1, 95, NT, and MacOS and requires about 1Mb of RAM. MrSID Compress and Distributed Database Server operate in WindowsNT, UNIX, and MacOS and require 32Mb physical RAM plus enough storage for the original image and for the compressed file. Input files can be raw data or in a number of popular raster formats including TIFF. MrSID Viewer allows exporting in MrSID compressed format and in non-MrSID formats.

The first aggregate of items to be scanned as a G&M Division project is our collection of panoramic views. Following the listing of items in Panoramic Maps of Cities in the United States and Canada: A Checklist of Maps in the Collections of the Library of Congress..., published in 1984, we have completed Alabama through Minnesota. Permission to include facsimiles and items for which we have a photographic reproduction from another institution will be sought, so that those items can be made available in electronic form.

While we expect to include images of maps from atlases in the NDLP, we have encountered a number of problems with these. Even with access to a book scanner, the size and weight of many atlases would prohibit the use of this type of scanner. We have tested using a digital camera suspended above an atlas in a book cradle, but the distortion inherent in the variable distance to the center of the cameras lens, especially in the gutter, has thus far proven unsolvable.

In addition to the bibliographic data in the USMARC record, which will serve as the primary access to the images in the Library's system, we will be building a metadata database using Paradox. The metadata database will include non-bibliographic data, including the number of images required for each scanned map, the number of versions of

each image, the date the item was scanned, the scanner used, the reason or project for which the item was scanned, etc.

An unexpected benefit of our scanning program has been a new avenue for acquisitions. During the visit of the Madison Council in May 1995, the Chief of the Division was showing a facsimile of View of the University of Virginia, Charlottesville & Monticello taken from Lewis Mountain which was drawn by Casimir Bohn and published by E. Sasche & Co. in 1856 when Mr. Voorhees mentioned that he owned an original of this view. Mr. Voorhees said that he would donate the original to the Library if he could have a print from the scanned image to replace it, since it was hung in his hotel in Richmond. When a former staff member, who is extremely knowledgeable in the history of cartography and printing, was visiting the hotel for a meeting and saw and examined the framed view he remarked, "I thought Al gave the original to the Library."

We have also created a number of plotted images to be presented by Dr. Billington as gifts to Senators, Congressmen, and other dignitaries, including a facsimile atlas which will be presented to the Pope during a visit this month by the Madison Council to Rome.

The Division's home page is now available at < http://lcweb.loc.gov/rr/geogmap/gmpage. html > and the images we have created will soon be accessible through our home page or the Library's American Memory home page.

Access and Preservation via Digital Surrogate for Spatial Data

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One of those problems of success in many spatial-data collections is how to preserve heavily used collections while at the same time making these same collections available for what appears to be an ever-increasing audience. This paper will range from work done in one specific spatial-data collection, to a consortial approach, to an overall view for georeferenced information, as seen from the viewpoint of the digital library.

Access or Preservation - or Both?

Some key thoughts in most map librarians' minds when they contemplate moving hardcopy collections into digital form are:

* Who are my library's primary users–present and future–and what are their needs?

* What purposes and benefits does this project have?

* I don't want to have to have this work done again–but how can my library financially support preservation-level scanning?

* For maps, is what is needed access to the printing separates, or is a digital picture, whose information layers cannot be manipulated digitally, acceptable for the users of this collection?

The results of having asked these questions and come up with at least some of the answers at the Map and Imagery Laboratory (MIL) are the topic of this paper.

MIL's digital efforts are in three inter-related areas:

1. Davidson Library;
2. University of California/Stanford Map Librarians Group (UCSMLG); and
3. Alexandria Digital Library (ADL).

In actuality, these three areas are interrelated, since the Davidson Library administration is a strong supporter of MIL's participation in UCSMLG and of the Alexandria Digital Library, and since UCSMLG is considered a primary source of information-intermediary audience and evaluator, data, and metadata.

Davidson Library

The library administration has supported a comparison study of scanning of air photos, by three different firms: Stokes Imaging, Luna Ltd., and TGS Technologies. The object of this study was to find out what would be an optimal way to get MIL's 3,800,000 air photos scanned, preferably as many as possible of them in time to form a part of the ADL collections. As will be noted later, MIL already had at this point a scanner which is being used mainly to scan air photos, but our primary goal at the time of purchase of that scanner was mainly to have an inexpensive data-ingest scanner for Alexandria research. Prices per scan differed considerably from firm to firm, varying directly with the size of the file generated by the scanning procedure (itself dependent on dpi and bit depth).

A few points we found out very quickly. Eight-bit depth is usually sufficient for general

use of air photos (although we have experimented and scanned some at 24-bit depth, and then decided the tradeoff of having a file three times the size of an 8-bit file was probably not justified for our general users), and 24-bit depth is appropriate for air photos. Our decision as to appropriate dpi level was made by eyeball, noting that an air-photo print scanned at 600 dpi gives the general user about what is available from the actual print. Neither 150 nor 300 dpi is sufficient. 600 dpi is sufficient for many users, but how much more detail is needed for very sophisticated users and for archival purposes? Or, to put it another way, what is "enough" resolution? And the answer is, as always, that depends: who are your users and what do they need to do with the information?

Scanning to the size of the silver-halide grains (12 microns) in the film emulsion-which is appropriate for archival purposes-results in very large files. There is currently a scanner designed especially for scanning air photos (it even has a roll-film transport)-Lenzar's LENZPRO-which will scan to that level. It is also very fast, taking two minutes and eight seconds to scan a 9" x 9" air photo, resulting in an 800Mb file; it is intended for heavy-duty production scanning, and thus is ideal from MIL's point of view-but the cost of $120,000 is not!

Another decision is whether it is best to scan one's own materials, or to farm out the scanning. Once again, it depends: is this a one-shot deal, or will your library continue to do scanning over long periods of time; and moreover, will you and affiliated institutions be doing scanning of so many items that economies of scale may be realized by collaborative operations? This leads us to the next of MIL's projects for digital access and preservation.

University of California/Stanford Map Librarians Group (UCSMLG)

The UCSMLG is a close-knit group that has been in existence since the mid-1970s. On June 20, 1996, the group held a meeting at

MIL. We had available to us a handout from a meeting held June 14, just a few days previous, at the University of California at Berkeley libraries, that addressed the more general question of digitization of all types of library materials. This draft has subsequently gone to a second draft and we hope to see a final version out sometime in the first half of the year.[1]

The criteria given in this draft handout, titled "Principles of Selection for Digitization," are:

- Meets current faculty and student information needs;

- Offers economies of scale by benefiting many faculty and students (locally and worldwide);

- Maintains local or consortial collection balance among disciplines, information formats, and instructional and research tools;

- Adds value over paper- or film-based copies in various ways (e.g., more timely availability, more extensive content, greater functionality, greater access, improved resource sharing due to the ubiquity of digitized resources, increasing usefulness of the total collection, etc.);

- Justifies costs of digitization, including archival maintenance and access costs for the library as well as for its users;

- Achieves the goals of conversion to digital form (e.g., publishing, archiving, replacing, preserving);

- Meets criteria of copyright, fair use, and other legal restrictions imposed on intellectual property;

- Provides orderly access and navigation to and within the item or collection;

- Is accessible from all institutionally-supported computing

- platforms and networked environments;
- Employs formats that follow industry standards and are fully documented;

- Platform-independent, available in a multiplicity of formats;

- Originals difficult to use;

- Commitment made by library to preserve both originals and digital files;

- Possible to capture information adequately, to enable the digital version at least to serve as a surrogate for the original, thereby reducing demand for (and thus wear and tear on) originals;

- Originals not damaged by the conversion process;

- Losses of integrity of files caused by migration of files minimal;

- Preservation problem already exists with original (e.g., risk of damage or loss);

- Security needed for original;

- Of interest to funding agencies, and

- Originals have research value; etc.

With this list in our hands, the group discussed what needed to be done, and as a result put together a first-step draft white paper[2] (goals; procedures) and a list of items that most needed to be digitized (e.g., unique, heavily used collections at each library; items each library uses heavily, such as historic U.S. Geological Survey topographic quadrangles of California; etc.). The white paper is available at: < http://alexandria.ucsb.edu/~carver/ucop3.htm > .

Following is a list of some of the collections suggested for digitizing by the map libraries:

- Topographic survey [of the coasts of the United States] / U.S. Coast & Geodetic Survey. Scale 1:5,000-1:80,000. 1851? G3700 svar.U5 Case B Library has: 256 sheets, Reports T-1825-7, T-3653 NOTE: Scan Bay area 1:10,000 sheets. First geodetic survey of the coastline.

- Pacific Aerial Surveys. [Aerial photography, Berkeley campus, 1994]. Scale [ca. 1:600] Oakland, CA : Hammon/Jensen/Wallen & Associates, 1994. Map Room G4364.B5:2U5A4 1994.P3 Case B Library has: 22 col. photos. NO copyright.

- United States. National Ocean Service. [United States nautical charts]. Scales vary ; Mercator proj. Washington, DC: U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service, [18–? Map Room G3701.P5 svar.U51 Case B - NOTE: Scan all Bay area charts 1849-present, perhaps at 20 year intervals. Useful for shoreline changes.

- Non-copyrighted Bay-area cities. i.e., pre-1946 copyright expired, maps, especially Oakland, Berkeley, San Francisco

- Index maps for maps and air photos – AMS/DMA index maps would be ideal, since most are small. (1K-3K sheets?)

- All CA topographic quads (or maybe those before a certain date, say 1950)(2K? sheets)

- County road maps from Caltrans. Maybe consider digitizing one set for each decade?

- Maps of historical interest, including old plat maps of Berkeley, maps that show the burned area of San Francisco after the 1906 earthquake, how the San Francisco shoreline changed, county maps showing California rancho boundaries, etc.

- Outline and base maps of all kinds (county boundaries, hydrology, main roads, etc.) useful for students and people in business

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- California Forest and Range Experiment Station. Vegetation type maps of California and western Nevada. Prepared by Forest Survey Staff, A.E. Wieslander in charge ... in cooperation with the University of California. [Washington, D.C., 1932-38].

- Los Angeles City. Bureau of Engineering. Street Opening & Widening Division. Topographic Map sets of Santa Monica Mountains, Sunland-Tujunga-Verdugo Mountains, North-East Los Angeles, Sylmar-Granada Hills, Chatsworth Reservoir-Canoga-Park-Knapp Ranch, Baldwin Hills-Westchester- Playa Del Rey, San Pedro, LA Freeway Downtown Loop, Central LA, and Benedict Canyon. Los Angeles: Bureau of Engineering, 1959-75.

- Los Angeles (Calif.). Police Dept. Area boundaries of the Los Angeles Police Department [map]. Los Angeles, CA: Los Angeles Police Department, Cartography and Visual Aids Unit, [1992-96]

- Nature Conservancy (U.S.) Color infra-red aerial photos of Santa Cruz Island. Santa Barbara, CA: Pacific Western Aerial Surveys, 1985.

- United States. Bureau of the Census. 1990 County Block Maps. S.T.F. series for Los Angeles County (includes census tracts. Washington: U.S. Bureau of the Census, [1991].

- United States. Bureau of Land Management. [Township plat maps of the United States]. [1855?-

What seems to be a workable (but not easily fundable) solution is to have two scanners: one for oversize items, e.g., maps, and the other a production-level scanner for air photos, that would travel from campus to campus, starting with the items of greatest use to the largest number of University of California users (e.g., the aforementioned historic USGS topographic quadrangles), or unique items at greatest risk of being damaged or lost. In any case, the

digitized items would be prime candidates for inclusion in or transparent search by the Alexandria Digital Library.

The Alexandria Digital Library

First, a few words about the Alexandria Digital Library (ADL), how it began, what it is, and its goals and accomplishments. Its overall goal is to build a distributed digital library for geographically referenced materials - maps, images, text, multimedia, and so forth. The Alexandria Digital Library is one of six Digital Library Initiative (DLI) projects funded jointly by the National Science Foundation (NSF), the Advanced Research Projects Agency (ARPA), and the National Aeronautics and Space Administration (NASA).

The six funded institutions are Carnegie-Mellon, Stanford, the University of California at Berkeley, the University of California at Santa Barbara, the University of Illinois at Urbana-Champaign, and the University of Michigan at Ann Arbor. Each of the six projects, which began in October of 1994, and run through September of 1998, has a different focus; the focus of ADL is to provide online access to georeferenced information, with an emphasis on spatial data.

Since it is estimated that about 90 percent of all spatial data is available only in hard-copy form, metadata is of the greatest importance, given that very often that is all the user will be able to find in digital form. ADL has a beta-test site up on the Web site, which we encourage you to visit, try out, and let us know how to improve. For more information on ADL, or on any of the other five DLI projects, go to the Web site: < http://alexandria.sdc. ucsb.edu > .

As a major part of the prototype, approximately one hundred items in digital form were ingested. About 60 of these were aerial photographs; only three or so were hardcopy maps, and the rest were georeferenced information already in digital form (e.g., AVHRR - Advanced Very High Resolution Radiometer; DEM - Digital

Elevation Model; DLG - Digital Line Graph; TIGER files from the 1990 U.S. Census; Landsat satellite images; SPOT satellite images; a text on the Channel Islands with a link to an image of the islands). A CD-ROM was made with metadata for all the images on it, plus about 40 of the actual digital items.

Why did the prototype, in the scanning arena, focus on air photos? Several influences at the same time. Firstly, MIL has about 3.8 million air photos. The photographs of southern California, especially of the older flights (such as a 1928 flight of the coast of Santa Barbara County) are very heavily used. This very frequent pulling and refiling (some indexes are used several times in one day) - even though it is done by student assistants and not by the users - is deleterious to the indexes and the frames. It is extremely labor-intensive; one search can easily take several hours of staff time to pull and refile. It is easy to misfile; and as is true with all the "spineless" cartographic materials, when an item is misfiled, especially in such a large collection, it's gone.

The scanners MIL has are a venerable, finicky Eikonix (ca. 1987) and a Sharp JX-610. The Eikonix, which was purchased for about $60,000, takes 45 minutes to scan a color object, resulting in a 48Mb file, or about 20 minutes to scan a 15Mb black and white file; in either case the result is a 6,000 x 6,000 pixel image, no matter what the size of the object, be it 35mm slide or 5' x 4' nautical chart.

Unfortunately it is almost impossible to get a good color balance unless one is scanning a transparency on a light table (a consistent light source is essential). Maps are not transparencies, and in addition we were not interested in scanning the maps in sections, as has been done in other libraries; this meant we were effectively limited to scanning air photos.

The Sharp has a maximum size of 11" x 17," with several different dpi's possible: 150, 200, 300, 400, and 600. It takes well under five minutes to scan one item, even at the 600 dpi that MIL selected to scan its air photos (which

resulted in 29Mb for black and white and 98Mb for color). Thus the Sharp (which was ordered with a special attachment so that it could scan transparencies) is ideal to scan 9" x 9" air photos, which constitute the vast majority of MIL's air photo collection; we do have about 90,000 4" x 5" obliques and perhaps 10,000 9" x 18" air photos. We did discover later on that the Sharp does introduce some distortion, in the direction of the scanning arm; this means that the scans are not appropriate for use in photogrammetry, although for general use, they are fine.

During January of 1997, MIL initiated a pilot production-scanning project, using the Sharp scanner and funded by research done by the University of Arizona. One skilled (Arc/Info, Unix, scanner) worker could scan and create metadata for three frames per hour. This worker also generated coordinates for frames off air-photo mosaics and other indexes at the rate of 400 frames per hour.

Another reason that the air photos are an excellent choice for scanning is that the size of a monitor of a computer is seldom more than twenty-one inches and for probably the majority of users it is much less. Air photos are perfect: they are 9" x 9", and thus can be displayed on many monitors at exactly the size of the original item, or even larger. While it is true that air photos are very high resolution, well beyond the 600 dpi-maximum of the Sharp scanner, for many users, the 600 dpi resolution that appears on a screen monitor seems to be acceptable.

While there are maps that are 8.5" x 11", the bulk of MIL's maps are far larger, since MIL specializes in medium-scale topographic sheets (say, 2' x 3') and nautical charts (which can easily be, as was previously mentioned, 3' x 4' and even larger). This meant that if MIL had decided to scan maps, users would first have had to view a thumbnail, and then zoom in to an area of interest. The problems of providing users with a location map, scale, north arrow, and legend that could be popped up at any time the user needed them will need to be solved over the next two years, but were

certainly not anything we could deal with in the short term.

Air photos are one layer of information, which means that scanning them works extremely well as a form of delivery of information. What some users need to do is to manipulate the different layers of information that make up each map, which means that ideally the individual print separates would be scanned (although there is technology that can "scan" a printed map and separate out the layers with some level of success). On the other hand, many users just need to look at a map (sometimes slightingly called the "pretty picture" syndrome) so certainly scans of maps are by no means useless. It happens that the University of California at Santa Barbara has both a very active Geography Department that emphasizes the use of spatial data in digital form, and the National Center for Geographic Information and Analysis. Given those two points, and given that Alexandria is a research project, what would be most appropriate both for the faculty and for the ADL funding agencies would be to work with layers of information.

During a late-January 1997 meeting of the ADL Advisory Board, the main recommendation of the Board was the need for increased content (data and metadata) in Alexandria. In light of this recommendation, MIL is working on extending the pilot production-scanning project, since the nearly one gigabyte a day resulting from this work now has a place to go - disk storage - and a server capable of

handling heavy traffic - a DEC AlphaServer 4100, whose system name is, appropriately enough, fat_albert.

Conclusion

Spatial-data collections find themselves in the "interesting times" of the Chinese proverb, as we simultaneously maintain our hard-copy collections while steadily and increasingly collecting data in digital form. Digitizing the hard-copy collections to keep them from damage caused by handling more and more looks like the way we will need to proceed.

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1. Draft on digitization criteria; UC selection criteria for digitization. Draft, 21 November 1996. [Oakland, CA?: University of California Office of the President?}, 1996. Message-id: Pine.ULT.3.91.970121151901.13752A-100000@ariz.library.ucsb.edu

2. [Carver, Larry]. Draft 1.0 (UC/S working group for distributed spatially indexed information), 8-19-96; Alexandria Digital Library for Spatially Indexed Information. Santa Barbara, CA: Map and Imagery Laboratory, Davidson Library.

   http://alexandria.sdc.ucsb.edu/~carver/ucop3.htm

Preservation of Cartographic Materials: A Case Study

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Traditionally, preservation of maps has usually involved familiar practices of paper conservation and may have involved simple techniques such as tape removal, mending of small tears, and paper cleaning. Similarly, the process could become more involved with washing, applying a lining, varnish removal, and deacidification; and these processes usually would be performed by professionally trained conservators. Such processes continue today for collections that have completed needs assessment surveys and determine that certain items have artifactual value beyond their information content. In other words, such items meet certain criteria:

- They are deemed important to the institution's archival memory;

- They represent a significant cartographic example of that region's history;

- The item has significant monetary value;

- It is extremely rare and available in very few collections; or is simply unique.

Let us be sure to understand that this process, the actual treatment of the original itself, is the only one that preserves the item and not just its information.

Another process that is often used for embrittled materials is microfilming and, unfortunately, several collections of maps have been "preserved" in this manner. Another variant of this process is microfiche with which we are all too familiar. It is unfortunate because this is simply not a very satisfactory

method for reformatting or saving map information. Filming a 6' x 9' map and placing it on a one inch square piece of film has rather disastrous implications for access, viewing (much less research), and for copying. However, in some cases, this is the only format that you can acquire if interested in fire insurance maps, some atlases, and a variety of special collections offered by libraries. Most libraries are familiar with the number of fire insurance maps available on microfilm and I suspect your patrons are as fond of using them as ours are.

But before you think this may be another discussion of these two varieties of preservation let me assure you that it is not. I want to discuss two very different approaches to the preservation of cartographic materials that are ongoing in the Harvard Map Collection.

The first involved the creation of a prototype collection of maps that could be used to evaluate the use of Kodak Photo CD technology. For a variety of reasons we chose the geographical area of the Middle East and specifically the country of Israel. While most libraries do not like to admit their mistakes, I will admit to you that this project failed miserably on almost every variable that we attempted to evaluate. The major factor was that too many of the maps resembled my microfilm analogy of the 6' x 9' foot map being reduced to one inch of film. However, in this case, we were taking a 2' x 4' map-- think of the geographic north-south shape of Israel--and attempting to reduce that to a 35mm color slide. When we photographed

our ubiquitous 8.5" x 11" CIA map of Israel we had much better success; however, there are very few such sized maps for Israel. The issue here was not the failure of the Kodak Photo CD technology, but rather the innocence that we exhibited while riding on the edge of a new technology in that historic year of 1994!

Perhaps we should have learned to step back and let others experiment, but it wasn't long before we entertained further experimentation with this technology as it tantalized our minds with thoughts of improved access and mitigation of preservation concerns. Our discussions with a commercial firm, already working at Harvard on other scanning projects, led us to believe that we might have success if we chose a genre of materials smaller in size and a consistency of size would also make it more cost efficient. After some review, we created a selection of consistently sized materials that were less than 3' x 3' by choosing to photograph and scan sections of our early fire insurance map collection. After initial testing proved satisfactory, we decided to photograph about 2,500 images from several years and from different map publishers. Remember, this was also going to be a test on improved access and we needed a large image file which could be tested as a suitable substitute for paper files.

First, once again, let me remind you that this is not preserving the item but rather reformatting it. However, this reformatting hopefully will improve access to these materials, allowing the originals to be used far less, and that may be considered a "preservation" benefit to this process.

Let me stress that it is relatively easy and inexpensive to photograph and scan onto Kodak Photo CDs. What is far more difficult is to then provide bibliographical or descriptive access to, not only the titles on these CDs, but also the individual images themselves. Certain atlas titles, for example, included double-page maps, and it was decided to photograph each of these as two images, rather than one. Suddenly, the one page index at the front of each volume was no longer valid as it now had

two individual images for each one in the original. As our technology increases, be forewarned that you will fall prey to another techno phobia: why can't we now index more information such as bridges, wharves, buildings, parks, etc. The problem is you can, and this is fine if you reformatted 10 or 12 maps, but not fine when you have done about 2,500 of them.

Additionally, you are faced with creating a separate database for searching these items, keying the index to an individual CD, then inserting the CD, and searching for Image #27 for example. In other words, there is no magic software that allows you to query "Massachusetts State House" and in fifteen seconds the image showing the State House appears on your screen. In reality, you will have to create a database with all of the buildings you wish to search and then key them to "CD #" and then "Image" on that CD. This will become more complicated if you have 4 or 5 different images of the State House, on different CDs, representing different chronological dates, different publishers, and perhaps even different scales. To be perfectly honest, this is the stage where we find ourselves: attempting to decide which database will best satisfy our needs knowing that we will have multiple results to some of our searches and identifying a database that is expandable. The Kodak Photo CD technology provides you with five different resolutions ranging in computer file size from about 256 Kb to 18 Mb. Some computers may not even be able to work with this largest file of 18 Mb and it suffers from being relatively slow to load (an average of 45 seconds on a high end machine) and the entire image often cannot be viewed on one screen. Conversely, if someone wishes to concentrate on a particular segment of the map, requiring several zoom magnifications, this is the best size to work with. The intermediate file size, 4.5 MB, loads much more quickly, can be viewed entirely on one screen, and does allow considerable flexibility within the image.

For larger maps, and for serious research purposes, libraries may wish to consider the

Kodak Pro Photo CD, where an additional sixth file size averaging 72 Mb has been added. Obviously, fewer maps can be placed on one CD but the resolution for detailed viewing offers considerable improvements. It should be added that this information is current as of April 1997 and we can expect considerable improvement in CD, software, and equipment technology in the next few years, if not in the next few months.

Let me state categorically that CD technology is not, and probably will not be, THE answer to our preservation or access problems. Perhaps it is appropriate to insert in our discussion the phrase: "at what price?" A Photo CD with about 100 images can be created for about $100, to which should be added 35mm photography of the materials. Our intent was never to "discard or recycle" our original maps but rather to improve access to them and better preserve them through the planned less handling as mentioned earlier. We believe we can create a useful indexing database and then completely substitute the digital copies for reference and research rather than the originals, thereby mitigating our preservation concerns for these materials. Our access to these materials improves as students can produce color copies in the Map Collection in less than a few minutes. Moreover, imaging software allows the user to magnify their specific area of interest, albeit limited, better than the human eye can and far less expensively than photographic processes used in the past.

Therefore, we will accomplish our goals of improved access and preservation for this collection using CD digital technology. For considerably less than $5,000 we have been able to take nearly 3,000 fragile materials out of circulation, away even from reference,and yet believe we will be able to improve access to them. Obviously, the benefits are on the access side and we will still have to address the preservation issues in the future. Our goal was to preserve materials for the future when we might be better able to address these issues. We were definitely fearful of losing many of these items due to the increased

popularity of early fire insurance maps. It is hoped, over the next several years, to move more heavily used and fragile materials to this format for quick reference, ease of copying, and to decrease use of the original paper materials. Such materials will include additional fire insurance maps, maps of the Boston region, maps of New England, and some of our urban maps of European cities which are heavily used by landscape architecture and planning students.

A quite different, and yet very related, project was created based upon the need of students and faculty. Essentially, that need was their use of the 1990 U.S. Federal Census. It was aging rapidly, and they required additional information that would be up-to-date. Even though very few of our students are from Massachusetts they are still using the state, and the City of Boston, as the laboratory for many of their studies which require socio-economic and environmental data.

Unlike the rest of the country where counties are the basis for most data dissemination, it is the town that is the collection dataset for most of New England. This was still not nearly as detailed as census tracts or block groups, but Massachusetts' 351 towns certainly provided a far greater geospatial variation than would its fourteen counties. We soon found ourselves collecting information on shopping centers, tax rates, employment, supplemental income, race, and ethnicity. It also soon became apparent that we were identifying data that were far more detailed than the decennial Census and data that would never be included in any decennial Census.

An Advisory Board, including a local geography professor and demographer, led us to believe that we should publish an atlas for the State of Massachusetts. Further discussions led us to realize the folly of such a proposition. We knew that it would become a static collection of information the moment it was published and the very data itself revealed the dynamics of the changing economy, society's transitions, and the increasing challenges to our environment.

It soon became apparent that we should consider what had been in front of us the whole time: the World Wide Web. There were other atlases on the Web which we studied, reviewed, and then created a list of our own needs:

- Work interactively rather than just providing images;

- Expandable;

- Work with current Internet provider software packages;

- Provide zoom features;

- Provide geographic data features: scale, legend, and radial mapping;

- Provide graphic images, data behind them, and metadata files, and

- Allow users easy access and self-explanatory use – a REAL challenge!

We are fortunate to have a cooperative working relationship with the Environmental Research Systems Institute, Inc. (ERSI) through the ARL GIS Literacy Project and with its Boston regional office. Discussions soon began as to how we might address our needs and goals related to the collection, cataloging, and dissemination of digital data and progressed from considering ARC-INFO, to Map Objects, and eventually to the Arc View Internet Explorer. ERSI's cooperation was invaluable to this project and their time investment and expertise allowed us to progress to our defined goals and objectives.

A cooperative resource sharing relationship with one of Massachusetts' planning organizations, the Metropolitan Area Planning Council, led to discussions with the Massachusetts Regional Planning Associations. Their support and financial assistance moved the project forward and led us to concentrate our efforts in the following categories: geographic boundaries; communications; crime; education; employment; environmental

regulation; income; physical characteristics; population; race/ethnicity; real estate/lodging; and transportation.

The atlas debuted on January 10, 1997 as one of the first interactive state atlases with 150 different data layers. The user interface continues to be reviewed, revised, and hopefully improved. The limitations of one screen "to inform everyone about everything" is challenging and yet it should be realized that most people will probably not read your instructions on "How to Use the Atlas." The challenge is to address GIS issues in a non-jargon language that will be understood by a variety of users who are essentially unfamiliar with the techniques or principles of GIS. We assume that our users will range from the state official or business planner with some GIS experience, to the middle school student who may just happen upon the Atlas on the Internet. It is important that we not affront the intelligence of the practioner nor make it so difficult for the uniniated to use it.

Such a project has several implications regarding service and data interests.

Emphasize State & Local Data vs. Federal Data

Regardless of what may happen with Census 2000, libraries will always be faced with the issue of updating the decennial census as researchers continue to demand, and expect, more up-to-date data and geography. If the data collection for Census 2000 should be decreased, this would place an even greater emphasis and dependence upon state and local data for planning and research purposes. Our past practices in libraries have not given this data its proper credit and we may find ourselves more dependent upon it than ever before.

New Partnerships with Data Creators

As libraries become more familiar with GIS technology and data management techniques, we will become "players" in the digital field of GIS access and will be able to exhibit our

strength of adding service. It is very probable that libraries will now be invited to sit and discuss access and service issues with the data creators and form a profitable cooperative relationship.

Creates a 'Library Without Walls'

Implications are positive for the digital library as we allow more users to enter this library than ever before. It is not dependent upon discipline, and it is theoretically open twenty-four hours a day and 365 days a year. The negative side is that we may no longer know our users nor are we able to provide the reference interview that can be so important to providing the appropriate material for the question.

Attracts Users Who Would Never Use the Library

While it is difficult to monitor currently, it is apparent that a wider variety of users is attracted to digital data and its applications than was previously attracted to traditional print resources. It is also important to note that interest in the print collections is rising in a similar geometric pattern as persons may initially approach the library with a digital question and leave with a traditional map copy.

Marketing/PR of GIS Services

Libraries that are able to move from the traditional print world into the digital world, and back and forth, have a tremendous marketing/PR potential. They have the ability to boast of their traditional collections and yet let their users and the library administration know that they have not become a paper museum. They have chosen to participate in the new digital technology, and maps are one of the most powerful tools in this arena.

Rethinking Archival Responsibilities

As we begin to collect (and save?) digital data, it becomes evident that we must give some consideration to archival responsibilities. If we choose to display a map of welfare recipients in 1996 what choices should we make when the 1998 data arrives – do we simply delete the "old" data? Often, as libraries are well aware, it is the historical data that are far more valuable than current information.

Emphasis on Data

A GIS database emphasizes data, not maps, and that will be a potentially significant change for map libraries as they evolve into the next millennium. Not only will this change our current thought process but it may place libraries in conflict with other departments and disciplines that have considered data their discipline. It is important that we work with others in the library, and outside, to convince them of the critical importance of GIS as an analytical tool and how data dependent the technology is. We must also look at data as an access versus ownership issue, and that is a library philosophy that will continue to be discussed well into the future.

Designing Web Pages for Depositories

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Who, at this point, has *not* heard about the wonders of the Internet and the vast potential of the World Wide Web? Who has *not* heard the colorful, if cliched, term of "information superhighway"? The number of Web sites continues to grow exponentially, and an increasing number of those sites provide public access to Government information, whether on official Government sites, unofficial or personal sites, or through depository library home pages. The widespread presence of depositories on the Web has had three significant results. First, more Government information has been made available to more people as librarians and staff track down obscure sites and provide links to them through their pages. Second, access to this information has often been simplified as depository staffers make use of their library-oriented conceptual frameworks (such as subject headings and bibliographies) to help people navigate Government sites. Finally, it becomes more difficult for those libraries not yet represented on the Web to present a new framework for accessing Government information on the Internet without repeating the style and organizational approach that other libraries have used.

For those depository libraries that have hesitated to make their presence more widely known through the Web, for whatever reason, I hope that this discussion will give you several new ideas and encourage you to make your own contributions in promoting Government information on the Internet. After all, if I could learn how to design Web pages and live to tell about it, you can, too! My colleague, Rosalind Tedford, and I would like to present the steps you might follow to create your own Web pages based on the experiences we had at our individual institutions.

Before I began to work on our depository page at The College of Wooster[1], I asked myself certain questions that I think are important considerations for anyone creating any new Web pages:

Do you want to revise an old page or create a new one?

> Can you revise an older page with minimal effort, or do you need to create an entirely new one? In my case, the library had a government resources Web page in place when I took over the project; however, it was poorly organized and thus not very useful. The student assistant who updated all of the library's pages could not keep up with the constantly changing needs of the depository page. I therefore decided to take advantage of the summer break to begin a complete overhaul of the page's organization and design.

Do you have experience in HTML?

> I had absolutely no experience in HTML when I started the task of revising our Web page, so I knew I would need to learn the basics quickly.

What technical requirements do you need to meet?

> I had the good fortune to work in the same building as my chief Web contacts, so I could get fast answers to my questions about software for writing and updating the pages (these programs were already installed on my workstation) as well as any layout or content requirements. I had no real restrictions; I just needed to be

aware of how our depository page would fit in with the library pages. Unfortunately, some other Web servers have more stringent requirements, and it is best to learn about them before you invest any time in your page. (Otherwise, you may find you have to start over!)

What do you want from your Web page?

The two main questions to ask about your Web page are "What information will this page provide?" and "Who do I intend to reach with this information?" With so much information available on the Web, you want to be sure that you are not "reinventing the wheel." In my case, the main audience for our department pages has always been The College of Wooster community. That meant I needed to tailor the information on the pages to the research interests of faculty, students, and staff, interests that closely follow the general strengths of the college curriculum as well as of our depository collection. In addition, I wanted to ensure that the pages would be useful for those of us working in the library to help further those research interests, so the pages needed to be a combination of specific source sites and directories or locators.

Where to Start

Having answered these preliminary questions, my next step was to lay the groundwork for the Web pages. My top priority was to learn HTML quickly and thoroughly. An eight-week e-mail course on HTML did not prove to be as useful as I had hoped since I found the pace too slow, and the computing center did not offer a course on HTML until well after I had started teaching myself. Fortunately, our library had a copy of Laura Lemay's excellent book Teach Yourself Web Publishing With HTML 3.0 in a Week[2]. By reading a chapter or two a day and following the exercises outlined in the book, I picked up the basics very quickly.

Once I learned HTML, I needed to do a little research on how best to use it in reorganizing and redesigning our Web page. By looking at the home pages of several other depositories[3], I learned many different ways to organize the links to Government sites. In addition, the pages of other depositories gave me ideas for page design and layout. Some libraries used a simple, straightforward outline of the information they provided, while others used graphics, tables, and even frames to enhance their presentation. Since my knowledge of HTML was still at a relatively basic level, I found that by viewing the document source of pages I particularly liked, I could study the HTML commands used to create the layout elements I admired and then create my own design without copying someone else's page.

After exploring the possibilities of design and organization, I started searching for possible links to include in our department pages. My first step was to evaluate all of the existing sites from the old page and then find new sites to add to our page. Most sites previously listed on our page were still useful and could form the foundation of the revised pages, but some sites had been upgraded from gopher sites to WWW addresses or had simply disappeared and therefore had to be rediscovered. I then needed to find additional sites for our pages, a process that was easy and entertaining, if time-consuming. I found several useful sites announced on GOVDOC-L by other Webmasters or other depository librarians who had discovered these sites. While examining other depository Web sites, I also looked at some of the links listed there and added them to my list. Finally, to make certain that I hadn't missed any other potentially useful sites, I tried several searches using Yahoo![4] and other search engines, occasionally just browsing their directories for any unfamiliar sites. Every time I found a site that looked interesting, I spent some time browsing the site, evaluating both the information found there and the ease with which I could navigate the site, then added it to an ever-growing list of links.

Spinning Your Web

Armed with a long list of sites, I started to create (or "spin") our new Web pages by sorting through these sites and organizing them into larger categories that would make navigation easier. I started with five broad categories and then subdivided each category into more specific subjects:

- Government Publications at Wooster (collection, hours, staff)

- Federal Depository Library Program (plus resources for librarians)

- Guides to Government Information (in-house guides, guides from other depositories, Internet guides)

- Key Government Sites (Federal, state, locators)

- What's New (new Internet publications, current topics, news sources)

This division soon proved too vague and unwieldy, especially since the bulk of our links ended up on an oversized Key Sites page. I often had difficulty finding links myself because I had forgotten on which page I had listed them. A new organization quickly became necessary, and after looking at the examples of other depositories once more, I came up with a more detailed framework:

- General Information
    collection, Depository Program, staff, guides

- Finding Federal Government Information
    GPO Access, searching by agency, subject, SuDocs number, title

- Finding Other Government Information
    state and local, foreign, international

- In the News
    current topics, news sources, selected new sites

Once this new organizational structure was in place, I could then sort links into the appropriate categories and create brief but useful lists of sites for each category.

Developing the design and layout of the pages turned out to be even more of a trial-and-error effort. Given my limited knowledge of HTML and my desire to have a straightforward, useful site, I decided against using a graphics-intensive approach in designing the pages. Instead, I kept the information organized in brief lists with minimal graphics, choosing only a depository logo to head each page. This simpler approach ensured that each page would load relatively quickly, encouraging greater use[5]. It has also given me very few maintenance problems to solve!

Once I had developed various outlines of design and organization for the department pages, I created brief practice pages from personal bookmarks that allowed me to test my designs. These pages also gave me an opportunity to experiment with color, graphics, and layout as well as to sharpen my HTML skills. As I felt more comfortable with the elements of HTML and had a better idea of how I wanted the pages for the department to look, I began creating the "official" Government Publications pages. It took a great deal of tinkering with the commands, but I finally came up with a layout that appealed to me. I then created a template page with the header and footer information as well as other standard HTML commands. This approach helped me standardize the entire layout for all of the department pages without much additional effort.

After I completed the department pages to my initial satisfaction, I set up a testing period for the new pages. First, I saved the new pages to diskette, loaded them on the workstations of everyone in the department, then reset the preferences in Netscape on each computer to choose the new department page as the home page. This made it very easy for all of us to test the pages whenever we pulled up Netscape, and it encouraged us to explore all

of the links listed. Once we had all thoroughly tested the pages and I had made a few recommended changes, I then took the final step of loading the pages onto the college's server. The second phase of testing took place as I sent messages to friends and colleagues through an announcement on GOVDOC-L notifying them of the new page and requesting that people look at the pages, test the links, explore the organization–in short, "kick the wheels" on the newest Government publications vehicle to hit the Information Superhighway. The many responses I received were all greatly appreciated and very useful.

Keeping Your Pages Current

While I wish I could say that I had been able to rest on my laurels at this point, the most critical part of creating Web pages has been an ongoing one: keeping the pages current. This can only be accomplished when you yourself use your pages frequently. The easiest way to remind myself to use the department pages on a regular basis is to keep the home page on my Web browser set to the department page so that I can start searching from this point. I have also reset the Netscape preferences on the public workstations in Government Publications to pull up our home page first so that our patrons are encouraged to use our site and to give us feedback.

Maintaining the status quo on our pages, however, is inadequate in itself, so I regularly test and evaluate new sites. Notices and announcements about new Government and Government-related sites appear often on GOVDOC-L, so I collect the messages and test each one for relevance and usefulness to our department. I also keep my eyes open for other sites mentioned in the local paper, in library journals, in magazines devoted to computers or the Internet, on the radio, and in Web sites that review excellent new sites. Once I find a site that I think would make a good addition to our pages, I edit and reload the appropriate pages on our server.

Beyond adding sites, I keep the pages well-maintained by testing all links periodically.

Given the size and number of our department Web pages at this point, this can be a time-consuming and dull endeavor. (My last check of all our links took two afternoons!) However, it is critical to the accuracy and currency of any Web page and should be done on a regular basis. If any links are found leading to dead ends, I first try to find a new URL for the site, and if that fails, I drop the site from our pages. One thing that I have found to be very useful in keeping track of the many links I've made is a master list of all the URLs used in our pages. I have simply listed these links by title (often a brief form of the title that I can remember), indicated on which pages each link appears, and then provided the URL. When I start testing our links, I pull up the master list and correct URLs as necessary, both in the master list and in the HTML files.

Aside from these technical considerations, you can keep your pages up-to-date by continuing to learn from other libraries' examples. It never hurts to check back periodically and see what other depositories are doing with their Web pages! You can learn new techniques or get ideas for updated designs, especially if you reach a stage when you think you'd like to try something a little new with your own page.

In looking back at this entire project, I must say that learning how to design Web pages has been much easier than I ever expected. Although the HTML tags seemed like gibberish at first glance, I eventually found them to be as simple to decipher as the commands from any word processing program. Creating the design and layout for a Web page became easier as I learned what elements produced the greatest visual appeal. Although designing, maintaining, and updating our Web pages has been a time-consuming effort, the time spent has proven to be a worthwhile investment as the pages become a more valuable reference and research tool for library staff and patrons alike.

1. http://www.wooster.edu/Library/
   GovDoc.html

2. Lemay, Laura. Teach Yourself Web
   Publishing With HTML 3.0 in a Week.
   2nd ed. Indianapolis: Sams.net, 1996. A
   third edition is now available and covers
   HTML 3.2.

3. Among the many depository home pages
   now available on the Web, I found the
   following to be the most helpful:

- Oklahoma State University
  http://www.library.okstate.edu/dept/
  govdocs/docs.htm

- University of Memphis
  http://www.lib.memphis.edu/gpo/
  unclesam.htm

- University of the South
  http://www.sewanee.edu/dupontlibrary/
  GovDocs/govdoc.html

and

- Western Illinois University
  http://www.wiu.edu/users/milibo/wiu/
  depts/govpubs/home.sht

Other depository home pages can be found
through the University of Idaho's listing at
http://www.lib.uidaho.edu/govdoc/otherdep.
html

4. http://www.yahoo.com/

5. This approach has been advocated by
   many Web designers, including Jakob
   Nielsen (in "Top Ten Mistakes in Web
   Design," *The Alertbox : Current Issues in
   Web Usability* May 1996: online,
   Available:
   <http://www.useit.com/alertbox/9605.
   html> and Maggie Parhamovich (in
   "Spinning Your Own Web," *Documents to
   the People* 24.1 (1996): 48-49).

Creating Web Pages for Depositories

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History of Our Pages at Wake Forest

Wake Forest is in a unique position currently because we have a partnership with IBM which, among other things, includes providing all incoming students with IBM Thinkpads. The library has signed on as the training center for the project so we have been provided with the latest technology in the form of desktop and laptop computers, and annual software upgrades.

This was not always the case, however. Three years ago when I assumed the position I currently hold, Wake Forest had student labs which could access the Internet through Mosaic, but most of us in the library only had access through a gopher client. Web pages if done at all (and few were) were done using pico and typing in the HTML by hand. I had a friend who showed me my first HTML document and based on that, I designed a very basic home page for myself. Without direct Ethernet connections, however, I spent a lot of time running from computer to computer to test out my code. I gradually learned more code, how to do alignment, how to change font size, etc. and I began to consider designing a WWW page for our Government Documents department.

The problem was, I didn't have a computer with Internet access. Once I signed on to become a computer trainer for the pilot Thinkpad project in the summer of 1995, I received a laptop and got more training in Netscape and could finally begin to work on a page for our department. I was still typing in all the code for myself and the initial setup of our pages took me almost 2 months. As one of the few people in the library who knew HTML,

I took it on myself to do the searching, coding and testing of every link and image. I did not have direct Ethernet access to the Internet in my office until winter of that year, and so I designed the pages on my hard drive and then would pass them to others to mount on our WWW server.

Halfway into that academic year, however, we had our software upgraded to Windows95 and direct Ethernet lines run into our offices. Then my career as a Web master was altered forever. I heard from a colleague that Microsoft had written a plug-in for Word which would write the code for you. I downloaded it for free from the Microsoft Web site (www.microsoft.com) and taught myself how to use it. It was a great improvement. Looking back now, it really didn't do too terribly much, but it would write the code for images, font size, horizontal rules, etc. The things it could not do (background, color, centering) I would go back into the code and do manually. So while not perfect, it did save me a good deal of time in my first rewrite of our pages. The rewrite took me perhaps 2 weeks rather than two months, but then again I was only updating the pages, not creating them from scratch. I was, however, still dependent on others to mount the pages once I had created them on my hard drive.

Then, last summer, we were upgraded to MSWord 7.0 and with that came a new version of Internet Assistant as a standard feature of the University's software load. This version of Internet Assistant did alignment, color, backgrounds, and even tables. I used this to update our pages last fall and winter. About that same time, Netscape came out with Navigator Gold which was not only an Internet

browser, but a Web page editor as well. I tested it out. There were some things I liked better about it and some things I liked better about Internet Assistant, so this spring when I redid our pages once again, I used them both. The nice thing about Netscape was that you didn't have to have two big applications up and running at the same time, and on my 12Mb laptop this made things quicker. Netscape Gold could not, however, do tables which we used in our pages and so I switched back and forth between the two. I did gain a great advantage, however, when I got access to the Web server directly. This allows me now to update our pages at any time without relying on others.

Now, however, with Netscape 3.0, the editing capabilities are greatly improved and at this point surpass Internet Assistant, and this is what I am currently using to edit my pages. Rumor has it that the new versions of both Word and Netscape will improve their Internet editing abilities even more. We will be upgraded to Office 97 this summer and I will learn more about the built in Web editing features of them then. As of now, however, I am committed to Netscape Gold 3.0 for my next round of updates which will be in May.

The Current State of Web Pages at Wake Forest

I currently spend a couple of hours each week at most adding links that I find out about from GOVDOC-L or through other sources. Then, each semester, I usually do a big overhaul of the pages which usually takes a week or more. I check all of our links myself, even though I know there are programs which check them for you. The couple of time I used these programs they took me more time than just checking them out by hand. I check not only to be sure the pages still exist, but that the information I linked to them for is still there. I also use these overhauls to change images, backgrounds, footers, etc.

When I first began I wanted links to every site that existed, but as I have progressed and realized that there is no way I can keep up

with all the sites, I let others do the work and link to large sites which keep up with things better than I. Why reinvent the wheel? Instead, we have concentrated our energies on our North Carolina resources page which has increased in size tenfold from its inception, because we feel that it is one place where we can provide a service not available in hundreds of other locations.

Using Editors to Create and Maintain WWW Pages

When Jennifer and I first discussed the idea of demonstrating HTML editors for you, I toyed with the idea of demonstrating both Internet Assistant and Netscape Gold, but rather than giving a cursory look at both, I have decided to concentrate only on Netscape Gold since this is what most libraries have access to and since it can perform all the functions previously done only by Internet Assistant. Most editors I have ever seen work essentially the same way, so in essence, "seen one seen them all." What I hope to do today is to give you a general idea of how editors work by showing you specifically how Netscape Gold works. If any of you are interested in Internet Assistant, I have put a link to my tutorial on our WWW page at WFU and this can be accessed at <http://www.wfu.edu/Library/govdoc/doclib.htm>.

Before I begin, however, I want to talk a little bit about editors in general, what they are and their benefits and drawbacks. Web editor refers to any of the myriad of programs which exist which write HTML code for you. All the user generally has to do is to click buttons, fill in boxes and select options and the editor will compile all of the information for you. If you save the document as an htm file, you can view it through Netscape or another browser. Generally, editors give you a way to view the code if you wish, but this is not a necessary step.

First, the bad news. Editors are not of consistent quality. Some are better than others. There are hundreds out on the WWW free for the downloading and there are

hundreds being sold commercially. With the advances in Netscape, however, I would not suggest spending any money on an editor UNLESS you have complicated CGI scripts, Java applets, or other complicated elements to incorporate into your page. For the standard Web page, Netscape Gold works beautifully.

Another drawback to editors is that many people learn to design Web pages with them and never really learn HTML code. While this is seen by some as a good thing, (HTML *is* tedious), it can ultimately harm you because there are always things an editor does not do at all, or does not do right. If you know HTML, you can go into the code and fix these problems with a backslash or a simple command. Along the same lines, it is frequently the case that when you visit another WWW page that you see things you like. If you know HTML you can view the source code and see how they did it and then alter your own page to match. I would not suggest using editors instead of learning HTML, but rather as an accessory to HTML knowledge.

On the positive side, however, editors save you lots of time, especially if you have large pages to create. You can copy and paste text and images into them and the code is written for you. This saves you the time of hunting through your code for the one tag which you forgot to add in. Pointing and clicking at boxes and filing in blanks is also quicker than typing everything in. Changing your background color, for example, is as easy as finding a new color on the palette and clicking on it–no 6-digit color code needed. For those familiar with HTML, I think editors are great.

Creating WWW Documents with Netscape 3.0

Preliminary Steps

1. To create a new document, choose 'New Document – Blank' from the File menu. Skip to step 3.

2. To edit an existing page, go to the page and click the edit button. You will see a

dialog box which will ask you to save the WWW page (and all the images associated with it) onto your hard drive. You **cannot** edit directly on the WWW server!

3. Save your page (even though you haven't done anything yet). For those of you who created a new blank page, you must choose 'Save As' from the 'File' menu. Those of you who are using another page to work from just chose to save in step 2.

Time to Edit!

1. You will see your page laid out in the Netscape editor window. You can type directly into the window, just like with a word processor.

2. To change the color scheme or add a background image, go to the **Document** menu and choose **Properties**. There is a section there dealing with color.

3. Formatting is simple from the Netscape editor's toolbar. Put the mouse cursor over a button to find out what it does. Many of the buttons, such as bullets, numbers, indention and justification look just as they do in Microsoft Word.

4. Font size is controlled with the Increase and Decrease font size buttons. Next to them are the bold and italic options, as well as color. To use paragraph formats such as Headings, use the drop down paragraph format menu.

5. To add a link, choose the picture of a link. You will be prompted for the URL (address) and the title of your new link. To make an image into a link, select the image and then click the link button.

6. Adding a target, or bookmark, allows you to navigate within a page. First, you add a target to the point you want people to navigate **to** by highlighting the text or image which is to become the target. Then you click the target button. You will be prompted to name the target. Then when

you create a link, you can send the link directly to the target location by selecting it from the targets box at the bottom.

7. To add an image, choose the image button. You will be prompted to enter or browse for the image file, and be given options for how to wrap text around your image or how to deal with a text-only display. **Note:** You cannot see text wrapping in the editing window. You must load your page in the **Browser** window to see text wrap around an image.

8. To add a horizontal rule, use the horizontal rule button: This will insert the line all the way across the page. The default height is 2 pixels. To alter either of these, click on the line and choose "Horizontal line," from **Properties menu.**

9. To add a table, click the table button. You will be given spaces to define the size of the table first and then once this has been defined, you can go to the **Properties menu**, choose "Table" and define more elements of your table including colors, text alignment within cells, and many other options.

10. For items not available in Netscape Gold, you can insert the HTML tag directly into your document by going to the **Insert menu** and choosing "HTML Tag."

11. To see what your page will look like on the WWW, you can preview it through Netscape. Just click the Netscape button on the toolbar and you will be prompted to save your document. Once saved, a Netscape window will open and VOILA! Your document as it will look on the WWW.

Building Library-Agency Partnerships

Stuart M. Basefsky
Cornell University
Ithaca, NY

I. Why partnerships?

    A. Seek win-win relationships for agencies and libraries in times marked by budget constraints, technology transitions, institutional re-organizations, and policy gaps.

        1. Commonly, libraries lose access and control of information in these situations, and agencies focus on re-organization rather than dissemination.

        2. Opportunities are created for both parties to solve their respective problems through cooperation and sharing of skills and technological know-how.

    B. Share the burden and the risks of developing long-term policy solutions for information dissemination and access.

    C. Enhance reputations for efficiency and meeting bottom-line demands.

        1. Libraries need to seek additional public and private support. Maintaining a high profile through association with key agencies can help.

        2. Agencies need to demonstrate their ability to function in a cost-effective, efficient manner. By partnering with key libraries in possession of cutting edge technology and information skills, agencies prove themselves creative and innovative.

II. Different types and approaches for partnerships

    A. Library initiated

    B. Agency initiated

    C. Need driven

    D. Policy driven

III. The Catherwood Library example— "Public Service Privatization"

    A. The electronic archive at Catherwood: http://www.ilr.cornell.edu/lib/e_archive/

    B. Considerations for start-up: "Beyond the Hype: Using Internet in Libraries" http://www.lib.lsu.edu/govdocs/paperele.html

    C. Outcome for public and library http://www.news.cornell.edu/general/Jan96/CatherwoodInitiative.dg.txt

IV. Developing a culture of entrepreneurship in libraries

V. Federal depository libraries are cooperative (not exclusive) agents for Government dissemination of information in an Internet environment.

    A. Many libraries capable of providing effective partnerships are not Federal depository libraries. These libraries should cooperate with GPO and the depository community via GOVDOC-L and e-mail to insure access.

B. Many Federal depository libraries cannot afford partnerships based on technological innovation. These depositories should seek out technologically capable libraries in their Congressional districts to partner with agencies akin to their interests.

C. Libraries no longer have walls. As long as the information is freely available through a government monitored access system, it does not matter whether the physical library in which it resides is a designated depository. Agencies should be directed to request assurance of long-term cooperation and free access before entering into partnerships of this nature. Preference should be given to Federal, state and municipally supported libraries when these alternatives are available. Certainly, association and industry supported libraries are often equally reliable.

Go to: http://www.lib.lsu.edu/govdocs/paperele.html for a Web version of the following which was presented at Syracuse University on August 10, 1995.

Beyond the Hype: Using Internet in Libraries [Name of Conference]

Cooperative Collection Development of Important Government Information in Electronic Form by Subject Specialty Libraries Presented by Stuart M. Basefsky, Reference Librarian, Martin P. Catherwood Library, School of Industrial & Labor Relations, Cornell University

August 10, 1995
3:45 pm, Room 123, ES Bird Library, Syracuse University

I. Government Information and the Internet

A. Problems

1. Finding Internet Sources--lack of publicity

2. Archiving or "after release" retrieval--find the reference more than 6 months after release

3. Reliability of data or verification of edition-- especially if not on agency's own Internet site

4. Citing original documentation for later retrieval

5. Fugitive documents--not referenced by traditional databases or indexes; not cataloged

6. Non-standard presentation of data--information created for industry (subject) specific clientele

7. Questionable role of depository libraries

B. Prospects

1. Library creates partnership(s) with agency or its divisions for distribution and archiving of information--offer services free of charge, at least initially; push for "public service privatization"

2. Collect information (commit to long-term, electronic storage) and disseminate it--no copyright concerns

3. Collaborate with other library and information centers for cataloging, archiving, publicity, authenticity, recommended forms of citation, and reliable linkage

II. Why libraries should follow up on the prospects

A. Funding opportunities are created--industries, associations, foundations, and even the government agency itself may find that funding this operation is

advantageous as well as prestigious. Multi-media element of Internet makes advertising of donor generosity easy.

B. Answers the question, "Where's the beef?"–biggest complaint about the Internet is the lack of substantive information. This provides some of that information (original source documentation).

C. Attracts users to your Web site, which you have produced at great cost– advertising your Web site is easy when users find useful information. This increases your user count.

D. Traditional, client-oriented and scholarly reasons for collecting

III. Concrete examples of collecting

A. Monitor press releases and news stories

B. Use directories to contact offices holding information useful to your library

C. Be careful about what you ask for, you might get it.

1. Start off with limited goals– experiment with the agency and your Web to see the result. How does this affect reference services? Are you getting new and different kinds of questions? What are the staffing consequences of collecting electronically formatted materials?

2. Choose government publishing projects with short lives to start with. Commissions, task forces, and short-term projects are ideal– to do otherwise potentially jeopardizes your relationship with the agency if you find you cannot perform. Keep your library's image in mind.

D. "Sell" your service to the agency by

explaining that you are providing publicity, cataloging, archiving, and other traditional types of library packaging that neither governmental nor commercial agents are willing to offer. Furthermore, you are giving free access to users and the service is "free of charge" to the agency.

E. Ask your contacts to keep you in mind for other publications or projects.

F. Example from the Martin P. Catherwood Library, School of Industrial & Labor Relations, Cornell University

Go to URL:
http://www.ilr.cornell.edu/lib/ e_archive/

IV. Need for library community cooperation

A. A clearinghouse for monitoring the collection and distribution of *official* government publications on the Internet by libraries is needed–this is something that GODORT in ALA or GD/SIS in AALL should work on. Perhaps a collection development listserv for Internet accessible government publications should be established. Why not invite Marcive, CIS, or other commercial services to help with the monitoring for the good of everyone?

B. Establish an entrepreneurial spirit among government collection development librarians. Rely on this competitive enterprise to gather publications in a diverse spectrum of subject specialties–it is too difficult to coordinate collection efforts nationwide. After a publication is collected, report it to the clearinghouse.

V. Turn this initiative into a public policy coup–Demonstrate to Congress and the American people that free

enterprise is alive and well in libraries.

A. Tell all that this is a payback for past and future government support of libraries. Libraries will voluntarily take over certain areas of government responsibility in collection and dissemination of information.

B. Tell industry to support libraries which aid their future information needs by collecting in this manner.

VI. Additional Spin-offs

A. Nation-wide electronic reserves become a possibility–well-crafted, reliable sites holding original, government documentation can be "pointed to" by any school or library as part of an electronic reserve reading list.

B. Produce instant bibliographies with full-text pointers–the all-in-one library becomes a reality. Use a pathfinder (at least with government materials) to produce your own instant, subject specialty library on your desktop. After using the materials, trash them but keep the bibliography with pointers for instant retrieval if necessary.

A Working Partnership

Gregory Lawrence
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Introduction

The USDA Economics and Statistics System, a joint partnership between the Albert R. Mann Library and three economic agencies of the U.S. Department of Agriculture (USDA), began three and a half years ago. The partnership with these agencies, the Economic Research Service, the National Agricultural Statistics Service, and the World Agricultural Outlook Board, supports a network site for up-to-date and historic agricultural economic information.

Currently, the site maintains 79 full-text serials and nearly 200 historic data series. A significant portion of the data received is time sensitive, which requires the library to post the information to the Internet within minutes. We disseminate this information via WWW, gopher, telnet, ftp and e-mail, and this work is supported by 11 librarians and 7 library assistants.

Why a Partnership?

You may ask why would a library seek out a partnership which requires a considerable commitment of staff time and resources?

The answer lies in the mission of the institution. Mann Library supports research and education for a land grant agricultural college. The land grant concept, as originally defined in the Morrill Acts in the 19th century, sets aside public land to fund institutions of higher education which would provide instruction in the agricultural and mechanical arts. For over a century, the Department of Agriculture has promoted agricultural research and practice at these institutions, and the land grant libraries have actively acquired USDA publications about this research.

Mann Library is also a depository library which collects agriculture and related information published by the Federal Government, and makes this information available to the general public.

The library collects USDA information in whatever format it is published: paper, microfiche, digital; and has a particularly strong collection in the area of agricultural economics. Therefore, we were especially excited when an opportunity arose for the library to collaborate with the Economic Research Service and acquire complete sets of their digital information.

In one agreement, the library was able to acquire hard-to-get information, and experiment with new ways to deliver this information to citizens who might never enter an agricultural library. When we consider the fact that we distribute over a half million full-text documents and binary data files annually from this network service, we are convinced we made the right choice.

The Library Experience

Mann Library's experience with the USDA partnership has been both a challenge and a change for us. Information in a digital environment is far more dynamic than print. In our arrangement with USDA, data is arriving at all times during the working day. We must frequently juggle our staff schedule in order to have staff ready to receive, review and process the information. An added complication is that the University holiday calendar is significantly different from the Federal one, and on some of our days off we require staff to be able to process the data from their home.

Also, much of this data is time sensitive, and we have to hustle to get it posted to the network server. Almost daily there are minor obstacles to navigate: editors miss deadlines and the information arrives late. Or Internet performance is uneven, and, not so rarely, unavailable. And sometimes we discover small errors which need to be fixed before the data goes out.

Finally, we have to be creative in solving access problems experienced by remote users. For example, last week I had an exchange with user X. This person wanted a text file, but could not retrieve it with his WWW browser for an unknown reason. We couldn't reproduce the problem with our software, but we couldn't assume this patron's problem wasn't real. After an exchange of information with this user, I sent the file, a full 450 Kb, via e-mail. It arrived complete, he was happy, and mentioned in his thanks that he had a daughter who graduated from Cornell.

The partnership has also revolutionized our work. In the past, we developed a top-notch system to process depository documents. With the USDA information, we are developing a top-notch system to process digital government information. To bridge the two we rewrote our job descriptions.

Four years ago, when we loaded the first USDA data onto our server, our Information Technology (IT) personnel were afraid to give our acquisitions staff an account, much less unrestricted privileges, on the UNIX-based network systems in the library. To solve the problem, we provided sustained, in-depth training, purchased up-to-date equipment and software, and re-engineered our work processes.

Today, the acquisitions staff routinely modify both processing software and the data archive contents on those same UNIX systems, and the IT staff are looking to transfer other library computer functions to the division. We didn't remove or replace the staff; instead, by showing we could master digital skills, we replaced inappropriate IT staff preconceptions.

We also rethought library functions. You might think acquisition library assistants rarely answer reference questions. Not so with USDA information. The acquisitions staff routinely answer access and content questions from remote users.

Also, we have integrated the USDA titles into our other electronic titles on the Mann Library Gateway. The classic HTML Web page is staggering under the growing load of titles. Devising better home pages is no longer thought of as a "reference only" or "cataloging only" prerogative. Instead, it is an effort distributed throughout the library.

Finally, we are breaking down the division between librarian and programmer. We are not looking to make librarians into programmers, but we are insisting new computing projects be designed, and the appropriate staff be trained, so that the project can reside, be upgraded and maintained at the division level of the library. This practice was initiated with system enhancements to the USDA system.

We are also having to reconsider collaboration with other libraries. Mann Library is mostly self-sufficient, but we're aware there is more USDA information to be managed than any one library can manage. Ultimately, much of what we do will have to complement other networked academic/USDA partnerships. We are aware of the need to plan ahead to prevent overlap of effort, and to guarantee that essential services are not overlooked. We hope to facilitate the process through meetings and personal contacts.

The Future

We believe agency/academic partnerships benefit both the agency and the library, but the arrangement requires periodic re-examination. Three years ago, both the library and the Economic Research Service agreed that there was a critical need to create network access to digital information. Today, that need has been met; indeed, the partnership has developed excess file delivery capacity. Re-evaluation

establishes new priorities for both partners, and while it is not clear which priorities will now rise to the top, the process must take into account changes in both technology and the political climate in the University and Washington.

Preservation Is Common Sense: Practical Tips for Government Documents Collections

Julie Arnott
Southeastern Library Network, Inc.
Atlanta, GA

Introduction

When I looked at the program and saw that the great majority of the sessions cover electronic information dissemination, I worried that my presentation might be a little out of synch with the overall conference theme. You can imagine how heartened I was to hear David Cobb, Head of the Harvard Map Collection, emphasize in his talk this morning that while electronic information can provide terrific access, it is only a preservation format to the extent that it reduces use of the original.

The focus of my talk is not the preservation of electronic formats, but rather the preservation of the many other, more traditional formats that comprise our collections. How many of you have paper in your collections? Magnetic media? Microformats? LPs and CDs? Photographic materials? I see that most of you do.

How many of you are involved in the following activities?

       – processing materials
       – shelving materials
       – repairing books
       – binding periodicals and monographs
       – circulating materials

Once again, I see that the answer for most of you is "yes." I'm going to talk about how you can integrate preservation into routine, ongoing activities by modifying how they are done–with an eye to the long term impact on collections. You don't necessarily have to hire new staff or spend a lot of money to preserve your collection. There are practical,

inexpensive things that you can do to prolong the useful life of the formats that are in your library's collection.

The first nine items on the following list comprise the traditional elements of library preservation programs. Notice that I have a question mark after "digitization." I can't emphasize enough that it won't be a preservation format until standards for data refreshment and migration are developed **and** widely adopted.

Elements of Preservation

- Shelf preparation
- Stack maintenance
- Environmental control
- Disaster preparedness and recovery
- Security
- Staff and user education
- Library binding
- Replacement and reformatting
- Collections conservation and conservation treatment
  Digitization(?)

Today, I'm going to focus on four of these elements: shelf preparation, stack maintenance, the storage environment, and library binding. I'll focus on common-sense, no cost or low-cost preservation measures. My co-presenter, Tom Clareson, will cover disaster preparation and recovery.

I'll begin by giving you a definition of preservation. It is:

The sum of the activities a library or archive

undertakes to **maintain** its collections in **useable** condition for as long as they are **needed**.

So you can see that whatever steps you take to prolong the useful life of your collections constitute preservation.

The tips that I'm going to discuss apply to existing activities, existing workflow, and to circulating collections. The first and best tip I can give you is this: **We need to stop actively abusing our collections.** How do we do this?

- Eliminate or improve book drops
- Improve shelving practices
- Improve handling practices
- Change your library binding profile
- Monitor and improve the storage environment
- Change repair supplies/practices.

Before I go any further, we need to review the three major factors that affect the longevity of collection materials:

1. The chemical and physical composition of collection materials:

Collection materials are made up of organic matter and all things that are organic deteriorate over time. Organic materials have what we in preservation call inherent vice. What this means is that the resistance of an article to degradation is built into it at the time of manufacture; it is part of its nature.

Consider, for example, the paper-based materials in your collections. Many of them are deteriorating, right? The inherent vice is the acidic components (e.g., ground wood pulp, chlorine bleach) that are part of the manufacturing process. Currently, some GPO documents are printed on recycled paper, but that paper is not yet consistently acid-free or alkaline, so acidic paper and its associated problems will continue to be part of your documents collections.

2. The storage conditions which they are subject to:

Providing an adequate storage environment is the single most effective means of extending the life of a collection.

3. The type, intensity and amount of handling materials receive from staff and patrons.

Because we know that often we're dealing with less-than-sturdy, complex materials, it is important that we handle the materials carefully. Consider it cost-effective resource management.

Care and Handling Tips for Paper-Based Materials

Preservation concerns begin as soon as material enters the library. In fact, in order for depository libraries to comply with GPO regulations, shipping materials (e.g. rubber bands, shrink wrap, mailing tubes) must be removed from materials prior to shelving. The rolled material should be stored flat. Rubber bands must be removed because they emit sulfuric acid as they age, and the acid is damaging to collection materials. Just taking these simple, common-sense steps will contribute to prolonging the useful life of your collections.

Staff should be trained to recognize potential problems; to examine all material on arrival to identify problems that might lead to rejecting it; and to flag material for treatment so that problems (e.g., the pages pop right out of the binding) can be remedied before they get worse.

Shelf Preparation

When processing materials for the shelf, the following tips will help reduce potential damage to collection materials.

- Don't stuff bulky papers or cards between the endpaper and cover as this will damage the binding. Instead, tie the papers to the outside of the cover with a piece of cotton tape. Don't use rubber bands!

- Be careful when applying security strips (3M Tattle Tape®). For example, don't place double-sided adhesive Tattle Tapes in the center of a periodical signature! The pages may stick together and information near the margin will be unreadable.

- Place the date due slip on the flyleaf, not on the cover of the book. Placement there will minimize damage to the book's binding when the due date is stamped on the slip.

- Use non-harmful supplies such as non-acidic adhesives to affix loose plates, pockets, bookplates, etc. Do not use rubber cement!

The resource list that I've provided includes several catalogs that offer "preservation-approved" supplies such as non-acidic adhesives and cotton tape.

Stack Maintenance

Library collections spend the majority of their existence sitting on shelves, so the conditions they are subject to there have a great impact on their longevity. Much damage can be avoided by training the shelvers to use proper techniques. Heavily-used areas of the stacks should be given extra attention. Heavy volumes should be shelved upright, and adequately supported with bookends. If you lack adequate storage for oversized volumes, do not shelve them on the fore-edge. Over time, the force of gravity will pull the pages out of the cover and the volume will need to be repaired or rebound. Instead, change the location of the call number or SuDoc label to the upper right-hand corner of the front cover and shelve the volume on its spine. Common-sense shelving practices can save money by reducing both repair and library binding costs.

Care and Handling Tips for Non-Print Formats

Magnetic media

- Avoid tape erasers, storage near electric lines, fluorescent lights, magnets, electrical nodes.
- Store vertically, supported on both sides.
- Replace the original boxes with non-harmful containers.
- Make back-ups and migrate to newer formats.
- "Exercise" videotapes every 6-12 months.
- Store videotape in the "played" position to minimize print-through and sticking.
- Never play the masters! Make use copies.

LPs and CDs

- Store vertically, supported top to bottom, front to back, and handle by the edges.
- Clean LP's in a circular motion NOT across the grooves.
- Clean CD's across the grooves.
- Clean both with clean, soft, lint-free cotton velvet cloth.
- Keep playback equipment clean and in good condition.
- Minimize exposure to light.
- Use appropriate storage containers. Check the catalogs on the resource list!
- Keep spare needles on hand for record players.

Microformats

- Handle film and fiche by the edges; oily finger prints will damage the film's surface.
- Store in non-acidic, unbuffered boxes and envelopes.
- Keep reading equipment clean and in good condition to avoid scratching and abrading the film's surface.

Photographic Materials

- Handle by the edges; oily fingerprints will damage the surface of prints and negatives.
- Limit light exposure for color and early black-and-white prints.
- Store and display prints using acid-free, unbuffered materials.
- Store prints and negatives separately in acid-free, unbuffered sleeves.
- Check the supply catalogs on the resource list for appropriate storage and display

materials.

Environmental Control

Remember, this is the least expensive per-item preservation strategy. It is the single most effective means of extending the useful life of a collection. I'm going to talk about temperature and relative humidity (RH) "ideals" for circulating collections. The recommended standards outlined below can be difficult to maintain; the main thing to remember is to avoid fluctuation in temperature and RH.

High temperature can hasten embrittlement and accelerate deterioration by increasing the speed of chemical reactions. All organic materials containing moisture respond to the ambient moisture content by changing shape or size. Absorbing and expelling moisture accelerates the deterioration of collection materials. High relative humidity also accelerates the chemical reactions that cause deterioration, and it encourages mold growth and pests.

Molds common to paper and books will flourish in conditions above 70% RH. Low relative humidity can cause desiccation and embrittlement. So maintenance of stable temperature and RH will contribute to prolonging the useful life of collections. Consider this: all other conditions being equal, a paper-based collection stored at 60 degrees F will endure **twice as long in usable condition** as one stored at 78 degrees F.

Recommended temperature and relative humidity for circulating paper-based collections:

68-72 degrees F and 40-55% RH

Recommended temperature and relative humidity for use collections of microformats, magnetic media, LPs and CDs:

70 degrees F and 50% RH

Recommended temperature and relative humidity for circulating collections of

photographic prints:

< 70 degrees F and 35%-50% RH

Some practical solutions for maintaining a proper storage environment include:

- Turn off lights when the area is not in use.
- Close blinds or curtains.
- Avoid fluctuations in temperature and relative humidity.
- Use portable dehumidifiers as necessary.
- Improve air circulation with fans.
- Make sure existing systems are functioning properly and are maintained (e.g., air filters are changed on a regular basis).

A Few Words about Photographic Negatives:

Cellulose nitrate was the film base used between 1889 and 1939. It is extremely flammable (call the Fire Department to handle any you have in your collection) and should be copied immediately onto polyester-based film. Cellulose acetate has been used since 1932. When it degrades it emits a strong vinegar smell. Copy degraded acetate film onto polyester, which is the most stable film base. It has been in use since the mid-1960's.

- Store negatives separately from prints.

- Keep in mind that color negatives are unstable and should be kept in cold, dark storage (39 degrees F).

Library Binding

How many of you have had formal instruction, either through workshops or in library school, on library binding? Have any of you ever toured a library bindery? I'm not surprised that many of you have not. Library binding is an activity that we do need to pay attention to and learn about because it is likely one of the largest line items in your materials' budget. For many institutions, it is the largest amount of funds spent on a preservation activity. Along with the environment, it widely affects the physical condition of volumes in our collections. With my very brief introduction to

one aspect of it today, I hope to set you on the road to becoming better consumers of library binders' products.

First of all, you need to understand **leaf attachment methods**, the processes that fasten the leaves (pages) to each other to form a text block. The leaves are attached with adhesive or with sewing thread. Drawings of leaf attachment methods, along with more detailed descriptions, can be found in the Library Binding Institute Standard for Library Binding, 8th ed., and the Guide to the Library Binding Institute for Library Binding cited on the resource list.

There are advantages and disadvantages to each type. When choosing one, the most important thing to consider is whether or not it is appropriate for the volume that needs rebinding or for the binding unit that needs first-time binding. Keep in mind how the bound volume will be used. A brief description of leaf attachment methods follows.

Recasing

This is an option that library binders provide, but it is not actually a leaf attachment method. Recasing is a good choice when a volume with a sewn textblock, with the sewing intact, needs a new cover. None of the inner margin is lost with recasing.

Sew-through-the-fold

This leaf attachment method can be done by machine or by hand. The library binder may choose hand-sewing instead of machine-sewing depending on the limitations of the machinery, and on the thickness of the paper. The most likely candidates for this leaf attachment method are periodical issues that are published in single signature formats, such as Time or Newsweek. Volumes that have been sewn-through-the-fold are easy to read and photocopy because they will lay flat when open. None of the inner margin is lost with sewing-through-the-fold.

Double-fan adhesive

This method is appropriate for both monographs and periodicals with single sheet pages (i.e., not in signatures). The spine is milled to ensure that all of the page edges along the spine are in single sheet format. Notching of the spine may be done to increase surface area for adhesion, particularly for coated paper. The text block is fanned in one direction and a layer of adhesive is applied, then fanned in the other and another layer is applied. The quality of the adhesive is very important. The current Standard specifies the use of PVA (polyvinyl acetate), a non-acidic adhesive that does not become embrittled with age. Double-fan adhesive bound volumes have minimal margin loss, and are easy to read and photocopy because they lay flat when open.

Oversewing

This method is used to sew single sheets together into a textblock. Oversewing has a negative impact on a volume's flexibility, on how well it opens and stays open. It requires at least 5/8 of an inch of inner margin; how many monographs and periodicals have you seen with an inner margin this generous? The paper along the inner margin is perforated (and weakened) by the needles and thread during the process, and the sewing structure intrudes so far into the margin that it is virtually impossible for the volume to lay flat when open. It is a secure method of leaf attachment that can be used when the textblock is two or more inches thick. But there is a more user-friendly, preservation-approved option: split volumes thicker than 2 inches into two binding units and have them double-fan adhesive bound. The result will be volumes that lay flat when open so they are much easier to use and will suffer less damage at the photocopier!

Sidesewing

You often see this leaf attachment method used in children's books. It is suitable for textblocks less than 1/2 inch thick. Like oversewing, it perforates the binding edge and

requires a substantive 3/4 inch inner margin. Sidesewing reduces flexibility and makes volumes difficult to use because they will not lay flat when open. Here again, double-fan adhesive binding is the preferred option both in terms of preservation and the library user. I've barely touched the tip of the iceberg in terms of library binding. Additional factors that affect the useful life of collections include rounding and backing, endpapers, book boards, book cloths, spine linings, etc. These processes and materials are defined in the library binding publications on the resource list. I encourage you to look at them. I should mention that the 9th edition of the Standard for Library Binding is currently in the works but I don't know the expected publication date.

I hope that you can now see that preservation is not necessarily an expensive or elaborate set of activities that only really big institutions need or can afford. Much of it really is just common sense.

Brief Resource List

Supply Catalogs

The following suppliers offer a wide range of preservation-quality supplies:

Gaylord Archival Storage Materials & Conservation Supplies
To order, call: (800) 448-6160

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Emergency Preparedness and Recovery

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I want to ask three questions, as I do every time at the beginning of a talk dealing with emergency preparedness:

First, how many of your institutions have a plan to deal with disasters and emergencies? Can I have a show of hands?

Now, how many of your institutions have experienced an emergency or disaster during the time you have been there, where books have been destroyed?

Finally, how many of you have ever been involved in a library disaster, even if it was at an institution where you previously worked?

When people are talking about preservation of library and archival materials, they seem to use the terminology "disaster" and "emergency" almost interchangeably. I consider an event that harms even one item or patron an emergency, because if that single item is burned or drenched, it is certainly an emergency for that item!

A disaster, to me, is a larger occurrence, which can affect hundreds of books, your whole library, or, as in the case with earthquakes, hurricanes, tornadoes, and other natural disturbances, your whole community.

Some disaster scenarios which have recently occurred in libraries in the United States include:

- A burst pipe on December 26 when a reduced number of staff was working at the library.

- A fire which started in the early morning

hours and had consumed much of the library by daybreak.

- The late-evening tornadoes which struck two Texas towns, including their libraries and city halls, in 1994.

- A bomb threat which happened while the library was open, necessitating a complete evacuation.

- A gang fight which took place in the library because it was considered the center of town.

Management Concerns in Library Disasters

Let me talk about a management and administration-oriented way to react to situations like the ones mentioned above. There are five main steps which you should consider.

ASSIGN. The first step in planning for combating a disaster is to realize that you cannot battle it on your own. There are key roles for the staff of the library to play in a disaster situation, but you do not want to be the only person on staff familiar enough with your building, disaster recovery practices, and important resource people.

I suggest that you ASSIGN a team of your department managers and other interested staff to collect information for disaster planning at your institution, draft a disaster plan, and set up situations when disaster practices or drills can take place.

Next, MONITORING is important. This word has a variety of meanings in the preservation

context. First of all, it means monitoring the environment of the library -such factors as temperature, relative humidity, light, and pollutants. A high level of one of these factors, or, worse yet, a combination of environmental problems, can be responsible for such disasters as a mold outbreak or an invasion of pests! So, monitoring the environment for stable temperatures between 65 and 70 degrees Fahrenheit, and relative humidity around 40-50%, will help lessen the chances of these kinds of disasters.

MONITORING the external environment is helpful, too. How many of your libraries are located near busy streets or highways? Do you know if hazardous chemicals are allowed to be transported on these roads? Is your facility near a wooded area, and, if so, do you keep track of the fire warnings which are posted for wooded areas? Knowing the environment of the area where you are located is very important.

ORIENTING your staff AND USERS to your facility—through exit signage, visible placement of fire extinguishers, and practice of disaster evacuation and recovery procedures for the staff is an important step. Many libraries feel that they have reached a milestone when they get a disaster plan down on paper. However, a "theoretical" disaster plan, one which is not practiced and updated annually, is almost worthless. A disaster plan is an "always-changing, always-improvable document," as most of the improvements are made as the result of practice.

COMMUNICATE. There are various "Disaster Team Players," who can assist in the event of a library emergency. I have emphasized the importance of spreading the work among a number of individuals. However, I believe that when communicating about a disaster, the top administrator should be the point person who talks with the public and the press. And, because comments are open to so many forms of interpretation, I suggest that rather than verbal communication with the press, written statements or press releases can be a very effective method of sending the same message

out to a number of media outlets. You will also want to be communicating with other librarians, and other top administrators in your community in the post-disaster phase, in order to line up support for your reopening plans. Finally, COOPERATE. Because you are involved in the library community, where a concern for our recorded heritage is so important, you are linked to a group of professionals who will understand the basic activities and needs of your institutions. You may want to start right now to develop reciprocal borrowing policies, off site locations for library services, and multi-library disaster teams with nearby libraries.

So, these are some of the management functions which you may want to undertake at your institution, both prior to a disaster in the planning stages, and during and after an emergency.

There are two chief areas of concern in a disaster situation which require the attention of the top administrator: human and financial.

The HUMAN concern should be your main focus. No matter how valuable your collection or building is, your chief concern in a disaster situation should be the safety of your patrons and staff. Informing people of exit routes, making sure that those routes and the public areas of the building allow handicapped people to enter and exit, and practicing evacuation with the assistance of public safety officials are all methods to deal with this top area of concern.

The FINANCIAL concerns mainly center around how you might replace the materials in your library if they are damaged or destroyed during an emergency. Does your library have INSURANCE, or some reserve of money to replace books, furniture, or even the building in which your collection is housed? What type of risks are covered? Fire? Water? Explosions? Theft? Civil Disturbances? Are "Acts of God"—extreme natural disturbances, such as floods, windstorms, hail and snow, or earthquakes—covered? The most frequent cause of damage to library materials is water,

so a financial plan for the protection of documents in the case of worn pipes bursting, or sewers backing up, is important. You should also determine if your insurance or reserve money will simply pay for replacement of materials, or whether it will also cover cost of recovery, personnel costs, or special restoration procedures. Having a written POLICY about the steps to take, people to contact, and costs to expect in the event of an emergency is important.

Steps in Disaster Planning

PLANNING AND PRIORITIZATION are areas which you can start on today, but which must be completed successfully for disaster recovery to be possible.

There are five main steps to the disaster planning process which I would like to cover:

1. Establish Authority

You must first establish authority, so that someone in the library, either the director or the "team leader," has control of personnel, equipment, and financial resources when and if a disaster strikes. This person must be in the position to make many quick decisions on the monies to be spent, staff or services to be used, and methods to be used in the recovery.

2. Establish a Disaster Planning and Recovery Team

The second step is to establish a disaster planning and recovery TEAM. This group of staff people in your library will work together to study the library building, the collection, and the roles of library staff in the recovery process. As I explained earlier, you do not simply want to have one person assigned to recovery. There are some "rules" of the disasters I have worked with that make it very important to have a team to respond to a disaster, as well as BACKUP people for each role on the disaster team (which I will explain in a moment). The rules of the disasters–what we call "Murphy's Laws"–are that they will always happen on weekends, when there is

not much staff at the library, and that they often happen at holiday time, when team members are out of town!

The team members which I would suggest you have include:

- THE TEAM LEADER: This is the person we spoke of who has the role of authority. The team leader will coordinate the team, make financial decisions, make insurance contacts, and handle publicity and public relations.

- THE RECOVERY MANAGER: This is a staff member who is knowledgeable of disaster recovery procedures, develops specific recovery procedures for your library, and trains staff and volunteers on how to recover collection materials.

- THE CREW AND BUILDING MANAGER assembles and coordinates work crews, whether they are from your library, from volunteer groups, or from a commercial disaster recovery operation. This person also controls workflow and supplies, and keeps all building-related records and materials, such as blueprints and floor plans.

- One of the most important, but often overlooked, jobs is that of the RECORDER. This person keeps inventory records of all of the damaged materials. This can be very important, because people often move quickly in disaster situations to get books out of the library, and the recorder has the responsibility to make sure the books get back INTO the library in order so they can be put back on shelves in correct order. At one library which was hit by a tornado, the RECORDER said it took only three hours for people to remove the materials from the library, but it took three months to get them back on the shelf in the correct order! This team member also keeps track of all of the information generated by the recovery team.

- Finally, the COMMUNICATIONS

MANAGER commands the control center for communication, which often may be by other means than telephone, if the electrical power is out. This person also communicates with outside resources, and deals with all incoming and outgoing calls.

3. Assess the Risks

Assembling the Disaster Team and assigning them to specific roles may take a good deal of time. Once you have established the team, however, they can go directly to work to ASSESS the risks in your institution. I often think of this as "preventive medicine" against a disaster.

The first step of assessing the risk of a disaster is to do what I call an "EMERGENCY HISTORY." This is like a case history a doctor would do. The doctor may ask you if the risk of a certain ailment runs in your family; the disaster team asks if there is a history of roof leaks at your library, and then might identify that as a top risk for a disaster. This type of "HISTORICAL STUDY" of disasters at your library—writing down the details you can remember of any disaster or emergency, and then asking other staff to add details—can help you to try to correct problems, and protect from future occurrences as best as possible.

The team will then move on from finding out about past disasters which may have happened to assessing the risk of future disasters. They do this by looking at two things: the location of your library, including its geographic location, and the building condition. Some of the questions the team may want to ask about the library's location are meant to determine if there is a strong possibility of severe weather, flooding, fire, pests, hazardous materials, radiation, chemical, or transportation accidents around your facility, or if bomb threats or terrorism might be a possible problem.

When the team studies the risks of your library facility or building, they may look to see if the building has a damaged or leaky roof, clogged or damaged gutters or drains, old plumbing and pipes, an unmaintained heating system,

faulty or inadequate wiring, and look to see if the library has smoke or heat detectors or fire suppression systems such as hoses or sprinklers. If the team identifies problems with the facilities, these may need to be repaired in order to ensure that the building condition does not cause a disaster. Again, when assessing the condition of the facilities, it is very important to look at areas including architecture, drainage, protection from fire, protection from water, heating/ventilation, security, housekeeping and general cleanliness, and any building, renovation, or construction projects which may be underway.

4. Develop and Implement a Written Disaster Plan

At this point, the Disaster Team is ready to develop and implement a written disaster plan. The plan should include a listing of phone numbers of Disaster Team members and other important people at the institution; location of emergency systems such as keys, first aid kits, fire extinguishers, and water and gas shutoffs; emergency services outside of the library; supplies used in salvage of the collections, and a list of SALVAGE PRIORITIES.

Establishing these SALVAGE PRIORITIES is the most difficult part of planning. In the event that a large-scale emergency DOES happen, your decisions to salvage certain materials ahead of others will be critical. Many wet materials have only 48 hours before mold growth, which can cause irreparable harm, will begin. Other limitations to your salvage efforts can include time restraints by public safety officials, who may not let you into a facility because of dangerous conditions, space limitations for air-drying or freezing of materials, or quantity limitations because of a large amount of damage to the collections. A pre-planned list of salvage priorities will help ensure that your efforts in the critical first hours after a disaster will be directed toward saving your most valuable collections and records, instead of replaceable, low-value materials.

Priorities should be based upon the following concepts:

a.   Is the material critical for the ongoing operations of the institution--that is, is it vital personnel, financial, or collection inventory information without which your library could no longer function?

b.   Is it available in another format or another collection? Can it be replaced? Would the replacement cost be more or less than the cost of restoration?

c.   Does the material have a high or low collection value or priority--that is, is it a rare and important document, which is one of the prize pieces of the collection?

d.   Is it made of material which, because of its composition, would require immediate salvage attention? Materials including coated paper, vellum, or water-soluble inks are among the materials to consider for immediate salvage.

You should attempt to get at least the basic priorities of the institution on paper before a disaster happens. The chaotic time during and immediately after a disaster is not the time to try to remember what decisions you have made!

5. Practice Your Disaster Plan

The last step is a reminder to practice your disaster plan often: at least once a year, so that everyone remembers their role in a disaster!

Let us say that, even though you have done a great deal of planning, your library is struck by a disaster -- a leak from a heavy rainstorm, or a fire, for example.

Mitigation

Mitigation is a term used for the action you take during and immediately after a disaster to lessen or mitigate the damage caused by the event. Your preparedness, quick thinking, and response here are crucial.

As you know from reading about, or being involved in, crisis situations, they are a chain of events, not a single, isolated incident. When faced with a recovery or salvage situation in the wake of an emergency or disaster, you need to take all of the planning, preparedness, and practice you have had, and try to bring order into a chaotic situation.

First of all, as much as you may want to, DO NOT enter your building until it has been declared safe by public safety officials. You do not want to risk your life, or risk arrest for entering the site before police or fire officials have declared that it is safe to enter the facility.

It may be a while before you are let into the facility, particularly if a continuing fire hazard, electrical hazard, or contamination, such as radiation, chemicals, or asbestos, exists. One way to make use of this frustrating down time is to chart a course of action for recovery. You can contact staff and external assistance providers about their roles in the recovery; contact your insurance carrier or financial administrator and gather salvage and financial resources so that you can do as much good as possible, as quickly as possible, once you are allowed to enter the building.

Once you ARE allowed to enter the facility, don't rush in when disaster strikes, ASSESS the damage first.

Make sure you have a pencil (not a pen, which might accidentally mark material permanently) and paper as you walk through the library facility. Having a camera is also an important way to document the situation. Insurers suggest that you don't touch anything at this point, but that may be difficult if you see one of your prized possessions lying face down, open, in standing water. Whatever you do during this initial walk-through, try to leave the site in as close to the condition as you find it so that your insurance representative can see it, or, if they do not need to see the damage first-hand, take photographs to document the specific damage and begin recovery.

You will want to take some particular steps in rather quick succession here:

1. First, ASSESS the damage. Some particular points to look for are how much material has been affected. Is it a few books, a stack range, or the whole library? What kind of damage has occurred -- has fire, water, or mud and sewage entered the library? Finally, what type of material has been affected? Coated paper? Uncoated paper? Media?

2. Secondly, STABILIZE the environment. Get the standing water out of the facility. Measure temperature and relative humidity levels, and try to bring them to the recommended levels of 65-70 degrees Fahrenheit, and 40-50% relative humidity. You may need to use fans or dehumidifiers for this, and these can also help later, in salvage activities. In the worst of situations, you may need generators and other reserve power sources to run the fans and dehumidifiers.

3. CLEAN the area. You may need to wear hip boots, rubber or cotton gloves, and provide face masks for those people working on the recovery, especially if standing water, mud, or sewage is present.

Consider fumigation of the facility, and be sure to pull up and remove any wet carpeting, which is a breeding ground for mold. Be especially certain to remove the carpet backing, and check to make sure any carpeting under shelves is removed, as well.

At any point during this series of activities, depending on the value of the material affected, SALVAGE PROCEDURES may need to begin, so you need to decide how much help you can get from your staff, volunteers, and other librarians in your region, or if an external disaster recovery service may need to be called in.

I believe that emergencies which affect up to 200 items can be handled in the space and by the staff of a library. For events larger than

that, you may want to consider calling in disaster recovery experts and commercial firms. In my final comments, I am going to talk about what library staff can do in both small and large-scale emergencies and disasters to dry their books and records.

Recovery Methods

At this point, I want to give you some brief definitions of the various methods used to dry wet book and paper materials which have been damaged in a library disaster—via flooding, a pipe leak, or even in the aftermath of a fire, when fire personnel may have used water to douse flames.

Two major methods exist for drying materials: air drying, which can be done on-site if space and labor allows, and what I have termed "machine-assisted drying" which can be done via vacuum-drying or vacuum freeze-drying.

A. Air Drying

Let me begin by discussing air drying. It is accomplished by passing heated or room temperature air over the surface of wet materials. The moving air absorbs and carries off the moisture. This method can be done using fans, and, if the air is particularly moist, also using dehumidification machines. Books are stood upright on a layer of blotter or other absorbent paper, and turned upside-down when the paper becomes too soaked to absorb more water.

This is a space and labor-intensive drying method, which works well for small quantities of damp, but not soaked books. If the book is extremely wet, air drying may be too slow of a drying method, and may allow moisture to remain in the book long enough to cause swelling and distortion of the textblock and covers, as well as the growth of mold. I consider 200 as the maximum number of books to be handled by this method.

B. Freezing Materials -- An Interim Step

For both slightly-moist materials which will be

air-dried at a later date, or thoroughly soaked materials which will undergo machine-assisted drying, freezing, whether it is done in an institutional freezer or a freezer truck, can be a worthwhile interim step. It can buy you time to gather the supplies you need for air-drying, and lets you treat smaller groups of affected books when it is convenient for you to do so. If freezing is done as a step before machine-assisted drying, it will allow you time to contact a vendor, arrange transportation, and find funding to have materials treated. Those materials which exhibit mold growth can be frozen, since freezing halts the spread of mold.

C. Vacuum Freeze-Drying

This method works by causing ice crystals in frozen material to go directly from a solid state (ice crystals) to vapor, without becoming liquid again. By avoiding the "water-state," the harmful effects of distortion and mold have less of a chance to take place.

Books and papers are loaded into a freeze drying chamber, which is sealed. Pressure is then lowered to create a continuous vacuum. Then, the temperature is raised slowly and slightly in the chamber, to allow the ice to turn into vapor. The vapor is then attracted to panels in the machine, and when it contacts these panels, it becomes ice again.

This process can take from two days to over two weeks, depending on how wet the material was initially, what type of material it is, and the type of freeze-drying equipment used.

What librarians can do in the case of materials needing freeze-drying is to wrap the books in freezer-paper (from the butcher shop), and pack them loosely in milk cartons or boxes to allow them to undergo freeze-drying at a commercial facility.

Active mold can be killed by this method, but if materials are moved back into an uncontrolled environment again, the mold may become reactivated. Also in this process, some physical expansion of the items may occur, and some decrease in adhesive and paper strength may also result.

D. Vacuum Drying

This process, also known as thermal vacuum drying, thaws frozen material, then removes moisture by a vacuum process. A chamber is loaded with material; a vacuum is created, and temperature is decreased to freezing. Then, hot and dry air is introduced, and, after picking up moisture from the materials, is pumped out of the chamber. This continuous process is repeated until materials are dry.

This process is effective for newspapers, loose, non-archival papers, and some general collections materials, but should not be used on rare materials or coated paper because books do pass through a wet stage when hot air is introduced, which can re-damage the items. In addition, heat processes speed up aging of materials.

Vacuum-drying can also be done on-site, with materials in place, via desiccant drying. Moist air is pumped out of a section or all of your building, and dry air is introduced. This method is best for moist or slightly damp items.

My purpose today has been to introduce you to the elements of emergency preparedness and recovery, and to immerse you in the first steps of the planning process. This is a very broad area of preservation, with many specific areas of knowledge needed, but preparedness and recovery in the event of a disaster IS manageable.

Preservation Planning for Permanent Public Access to Paper-Based Collections

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I am delighted to be here and to have the opportunity to talk with documents librarians. My first position as a full-fledged librarian managing a Federal depository collection was invaluable experience, as it essentially involved all aspects of library management. However, I must admit that preservation was at the bottom of my priorities as a novice.

Several years later, in northwestern Ohio, I decided to apply some of my knowledge of Government publications in a history class by writing a paper on the popular and long-lived document entitled Infant Care. Infant Care was first published in 1914 and has been revised and updated through its latest edition published in 1989. As the second publication in the Children's Bureau "Care of Children Series," it was intended to distill the latest scientific and medical information on how best to care for babies through their first year of life. Not only has Infant Care been continuously revised and updated, this 67 to 135-page document has been shamelessly reprinted by commercial publishers.

So, it seemed like a good research project to examine attitudes of professionals about women, their roles in infant care and the role of fathers in infant care and development. I also thought it would be a project which would require a minimum of work to obtain my primary source material.

The first step in this project was to examine all revisions, which became a problem in distinguishing between reprintings, editions and revisions. This bibliographer's problem was tangential but became important to my project. My real problem was in locating

enough of the nine printing dates identified in distinct bibliographic records to identify significant revisions. I ultimately had to use the documents collections of three universities and one public library to get what was still an incomplete set of versions of Infant Care.

All the libraries had old editions of Infant Care, so I was fairly certain that missing copies had not been deliberately weeded out of the collections, although some may have been discarded because they had been damaged. None of the copies I found had been bound or were in any protective enclosure, although all were in various states, from tattered and falling apart to fairly good condition.

I bring this example to you to consider a number of issues about preservation.

Selection for Preservation

The first is selection for preservation. Your Instructions to Depository Libraries and the Federal Depository Library Manual (which would have made my life much easier 30 years ago) deals with the matter of what I call up-front selection and prevention of preservation problems quite thoroughly. Most of us assume that what we select for our collections will somehow be preserved forever. Although selective depository libraries do have the opportunity to weed after five years, they do retain some documents "permanently." But generally, whether we weed or not, we expect materials selected for our collections to be there when a client or constituent wants them, to be there in useable condition, with no information lost due to mutilation, damage, or deterioration.

We need to re-select materials for preservation as our collections get older. And we need to plan for a systematic process for this re-selection. Generally there are two distinct ways of planning for re-selection for preservation, with variations which include components of both.

Use-Driven Preservation Program Planning

One method is use-driven. Clearly some of the copies of Infant Care I examined had been used and returned to the shelf in poor condition. Use-driven preservation plans have several components: decisions for treatment, identification of items for treatment, resources for treatment.

Decisions for Treatment

Every time you review a document for preservation you are making a deliberate decision to keep it. Every damaged document not reviewed is a potential discard.

Policies on Selection

You will need to review collection development or selection policies. Do they provide guidance on re-selection for preservation? Do they need to? How will you apply the policies to decisions to treat or replace materials because of their condition? Will the cost of treatment or replacement affect the decision to keep a damaged item? Who will make the decision? You will find that the benefits of engaging your clients, such as faculty, in making preservation decisions go beyond public relations or good will. For instance, they may become advocates to support your preservation program and they will handle documents more carefully.

Treatments for Preservation

These decisions for treatment include repair, protective enclosure, binding or rebinding, deacidification, conservation, replacement. And, of course, a combination of these treatments may be necessary to preserve an item.

Repairs of materials can be highly cost effective. I recommend SOLINET'S Web site[1] for "Readings and Manuals on Book Repair." You may find that another unit in your library performs these tasks. Protective enclosures may be considered a part of repair or an alternative to repair. SOLINET identifies several works in the same list which discuss the use and application of protective enclosure to preserve books.

Binding or rebinding should be negotiated with other binding operations in your library if you do not work directly with a binder. We have found that staff needs to be aware of the condition of the text block when making a preservation decision to bind or rebind.

Deacidification at a production level is a new option for preservation. The Library of Congress is applying this preservation treatment for 50,000 books this fiscal year. See LC's Web site, "Deacidification Update,"[2] for more information and links to other information. The Conservation OnLine (CoOL) Website also has a "Mass Deacidification" page with links.[3]

Replacement of damaged materials includes acquisition of copies in better condition, reprints or microforms, and preservation microfilming or photocopying. I think those of you with experience know how to exploit your regional depositories as well as your colleagues on the Internet in trying to find "free" replacement copies. Your order departments should have good resources for identifying copies or reprints for sale. These same departments should have good resources both in paper and online for identifying microform copies of items to be replaced.

Custom preservation microfilming will be much more expensive. The Research Library Group and the American Library Association have good guides on how to create preservation microfilm and how to establish and manage a preservation microfilm program.[4] Many libraries contract out for microfilming services.

Preservation photocopying is an option which is very attractive for reference books. See LC's Web site, "Guidelines for Preservation Photocopying,"[5] and the ALA and National Archives guidelines for preservation photocopying.[6] Again, libraries usually contract out for preservation photocopying.

Identification of Items for Treatment

People who handle items in your collections discover documents which they think need preservation treatment. These people include your users, your staff and other library staff.

A use-driven program is based on the systematic examination of any item removed from the shelf or files. Staff who reshelve or refile materials should, as part of this task, examine all items for damage and condition. Users may also be encouraged to bring documents that need attention to the staff.

You should provide guidelines to staff on how to examine materials for preservation treatment and sort materials in need of treatment. These decisions for treatment may run the gamut from repairing tears to rebinding to replacement.

You will need to determine resources, e.g., staff, available to perform treatments or the labor-intensive actions preliminary to replacement. Are there library staff in other departments who can perform this work, integrating documents into their workflow? What will be the effect of increased workloads from the documents collection? What training will be necessary to bring staff up to speed? Who will do the training? Do you have adequate funding for additional staff or for contracting for some or all of the preservation actions? What supplies or equipment will you need to acquire?

The advantage of a use-driven preservation program is that the items which are used are treated. The fact that a title or issue was used once increases the odds that it will be used again. Studies seem to show persistently that 80% of our collections are never used. Use-

driven preservation treatment/replacement planning is a good use of limited resources.

A disadvantage of a use-driven program is that you have no control over the workflow to treat documents needing preservation action and other workload cycle peaks may coincide with peak intake of documents needing preservation treatments.

Collection Assessment Survey Preservation Program

Staff conduct collection or condition assessment surveys for damaged items and carry out preservation treatments. This method is recommended for microform collections, with a standard for sampling collections periodically as well as criteria for conditions assessments.[7] While the standard is specific to silver-gelatin microforms, the techniques in the standard could be applied to surveys of diazo microforms.

Paper-based collections surveys may be conducted on all items, although sample surveys can be conducted to determine the degree and kinds of damage for planning purposes. Northeast Document Conservation Center (NEDCC) will perform surveys. NEDCC provides some basic information about item-by-item surveys and offers a technical leaflet, "What an Institution Can Do to Survey its Own Collections," at its Web site.[8]

Condition assessments can be combined with inventories, but this complicates and slows down inventories. Inventories are important to preservation programs because if you don't know where it is, you can't preserve it! I am fairly certain that I was not the first to be disappointed in not finding a certain printing or version of Infant Care. But those who have combined inventory and condition assessments seldom recommend it to others. Conducting a pilot program to check out results with combined and separate passes through the collections may help you determine whether a combined run is a real cost saver. Follow-up on results of an

inventory and the results of a condition assessment survey create different workflows and workloads and these tasks should be considered before you make a decision. Some libraries have conducted condition assessments in combination with systematic cleaning of shelves and materials quite successfully.

The survey method with follow-up actions requires the same decision making and implementation planning as a use-driven program. A benefit of a condition assessment survey for preservation treatment or replacement is that the manager can control the time and workload, based on cycles of other workload demands and availability of staff to conduct the surveys and perform timely treatments or actions for replacements. For instance, acquisitions staff may have more time to search for the availability of replacement copies during certain times in the budget cycle. Managers can plan for segmented assessments based on availability of resources for both the assessments and actions. Contractors or volunteers may be available and suitable to conduct the surveys. Surveys can provide good statistical data on preservation needs to support requests for additional funding for preservation. The drawback for these surveys is that you may develop backlogs of items selected for treatment or replacement if you don't have a good balance between staff doing the surveys and those performing the treatments. Don't ask the question, "does this document need preservation treatment" if you cannot answer "Yes, and it will be treated promptly." Inadequate resources to fix problems may result in frustration and lack of credibility in a preservation program.

Condition assessment surveys provide you an opportunity for intensive training of staff to exercise judgment in making preliminary sorting decisions on what materials need preservation treatment and the kinds of treatment they need. Trainers or supervisors can review a lot of decisions in a short period of time and provide prompt feedback to staff.

You can combine these two methods,

performing use-driven preservation treatments while conducting condition assessments and carrying preservation treatments resulting from the assessment. You could determine which parts of the collections are most heavily used and conduct condition assessments in them first.

Ideally, then, all editions or revisions of Infant Care would have been on the shelf in my university's library if it had an established preservation program.

Ah, but you ask, what about those which were missing? Security and preservation are inseparable in a good collection management program. Inventories and shelf reading are part of our equation for preservation. Items which are really missing need to go into the re-selection/replacement loop used for those items so damaged that they need to be replaced.

And, security is also part of prevention for preservation. As the Instructions to Depository Libraries suggests, prevention of damage or unauthorized borrowing is an important responsibility of the depository librarian as the custodian of Federal property. The library staff are absolutely critical to an effective program for security and preservation. Staff should be trained in the best practices for handling and storing materials, to assist and instruct users in the best ways to handle documents. Staff should also be taught to observe how users are handling and photocopying documents and to be alert to users who may be mutilating or removing documents when not authorized to do so. Police or other officials who will respond to a staff report of theft or mutilation may need to be coached on how to respond and the importance of their involvement. Periodic reviews of procedures with staff and police collaborating are useful. Award or recognize those staff who reported unauthorized borrowing or mutilation of material.

When my son, Max, was in first grade, he was very excited about an introductory tour to the school's library. I was quite interested in his

account of this formal introduction to what he insisted on calling a media center. Wanting to get a sense of what he learned about what librarians do, I asked him what was the librarian's job in the media center. Max corrected me, "Mr. Smith was a "media specialist" NOT a librarian. So, I asked, what does the "media specialist" do? Max replied that the "media specialist" "guards the books." I was quite amused at what I thought was a medieval notion of the role of librarians, or media specialists. I'd like to propose that "guarding the books" is still at the heart of our professional responsibility: guarding or preserving the books or information in all formats and media, even electronic, so that future generations may use that information and trust that it is authentic. Choosing what to guard and preserve is also at the heart of our professional responsibility. Doing nothing is choosing not to preserve. Selecting to preserve, using our experience, discrimination and judgment, will give meaning to the past for future generations who use our documents collections. Someone in the future may even come looking for old copies of Infant Care.

1. SOLINET, "Readings and Manuals on Book Repair ."
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3. Conservation OnLine (CoOL) Web site, "Mass Deacidification,"
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Planning for Preservation of Digital Information: an Archival Perspective

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Archival Preservation of Records Is Different than the Preservation of Publications, Because of Differences in the Basic Nature of Publications and Records

Publications are instruments intended to communicate information to an unspecified audience. That is, while there may be a target audience for a publication, it is not normally addressed to specific individuals. Records, on the other hand, are instruments and by-products of intentional activities. Their primary purpose is not communication itself, but support of the activities in which the records are created, or other subsequent activities connected to the ones in which the records originated. The target of a record is specific. Rather than author and readers, in the case of a record we have author and addressee.

Records are used to communicate within a group where a lot of information is common; therefore, there are a lot of lacunas or ellipses in records. Commonly shared information does not have to be repeated in each item. Thus, some information which is essential to understanding a record is likely not to be in the record itself. Records can only be understood in the context of other records which precede and follow in the course of an activity.

Therefore, archivists are not concerned with the preservation of a record, but with the preservation of a collection of records. In records preservation, the archival bond is as important as the individual record. The archival bond is the specific relationship, established by the records creator, between a record and other records in a 'fonds,' which is the totality of records created by an identified records creator. If we break or obscure the archival bond, then the meaning of the record is altered. Subtract the archival bond and you cannot preserve records, only documents.

Archival Preservation of Electronic Records Is Not Like the Preservation of Paper Records

For hard copy records, preservation equals holding on to what you have. For example, we preserve paper records by deacidification of paper, repair of tears, or replacement of originals by copies that are "true to form."

For electronic records, holding on to what you have will eventually mean loss of records, because all of the technology on which the records originally depend eventually will become obsolete, making the records inaccessible. So, while a basic technique for preserving hard copy records is the use of permanent papers, for electronic records, a permanent medium is irrelevant.

All digital media will eventually become obsolete. With new media formats being introduced on a time scale of 18 months, that eventuality tends to be very soon in arriving. Even if we could preserve a digital medium for a long period of time, along with maintaining the required hardware and software in operating condition, it would not be desirable to do so. The ever increasing expense of maintaining obsolete technology would be compounded by the ever decreasing costs of digital storage. Maintaining obsolete technology would also cut off opportunities to benefit from continuing improvements in

information technology. These improvements reduce costs for both preservation and access and, typically, enable a greater volume of information to be delivered in a smaller physical volume and more quickly.

Planning to Preserve Electronic Records

In its forthcoming Guide for Managing Electronic Records from an Archival Perspective, the Committee On Electronic Records of the International Council on Archives sets forth, as a principle in the framework for managing electronic records, "The archives must articulate preservation and access requirements to ensure that archival electronic records remain available, accessible, and understandable."[1]

Implicit in this principle is the view that:

"Preservation and access to archival electronic records are interdependent;

"Available records are physically intact, identified, and readable;

"Accessible records can be selected within search strategies consonant with the way the creator organized the records, and presented in an historically authentic form; and

"Understandable records are records which can be used as historical evidence. This requires identification of the provenance of the records, maintenance of the original order of the records, and the availability of related records and other contextual information."[2]

The purpose of preservation is access, but in the archival realm access means not access to information, but access to authentic records. This creates a basic tension in the preservation of electronic records. Preserving authentic records ordinarily means preserving them in their original form, without alteration. But, as stated, this is impossible for electronic records.

A **digital preservation program must be dynamic**, both to counteract obsolescence and to take advantage of improvements in information technology and decreasing costs of new technology. A dynamic preservation program is one that will select the best options for preserving the records. But this selection will be made from a set of possibilities that itself will change. The key to making the right decisions is a sound migration strategy. As stated in the 1996 publication, Preserving Digital Information. Report of the Task Force on Archiving Digital Materials, a task force sponsored by the Commission on Preservation and Access and the RLG,

"Migration is a set of organized tasks designed to achieve the periodic transfer of digital materials from one hardware/software configuration to another, or from one generation of computer technology to a subsequent generation. The purpose of migration is to preserve the integrity of digital objects and to retain the ability for clients to retrieve, display, and otherwise use them in the face of constantly changing technology."[3]

Migrating electronic records across generations of technology will inevitably involve transforming the records. The greatest challenge in archival preservation of electronic records derives from these inevitable transformations. The greatest challenge is not overcoming media fragility, or rapid obsolescence, or taking advantage of continuing improvements in technology. It is to distinguish the essential attributes of electronic records, which must be preserved, from other attributes, which are merely artifacts of technology, and therefore can be discarded without loss of authenticity or alteration of meaning.[4] There are a few, simple cases where these 'throw-away' attributes are well known. They include the physical media on which electronic records are written and the specific way they are physically inscribed on those media. The National Archives is at the fourth generation of digital media used for preservation. It will change to a fifth medium within a few years.

But beyond this simple level, there has not been much done in identifying the essential characteristics of electronic records. The ICA Guide, which I cited earlier, recognizes the problem:

> "Over time, it will be necessary to transform the records in order to migrate them from obsolete technology to current forms. Archival preservation requires that such transformations respect the authenticity of the records and that such changes enable the records to be retrieved and understood. Such transformation must be thoroughly documented."[5]

The problem is also recognized in a white paper which was issued on April 10 by the Consultative Committee for Space Data Systems, Reference Model for an Open Archival Information System.[6] While this report is a product of the space science community, it does reflect archival principles and concerns. An archivist from the Center for Electronic Records, Dr. Bruce Ambacher, is a member of the panel of technical experts which produced the white paper. The white paper provides a generic framework for addressing the issue of preserving and providing access to digital records. But the problem itself remains to be addressed. It is essential to do so in order to develop sound and viable plans for preserving electronic records.

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Permanent Access Through Partnerships: University of Illinois at Chicago, U.S. Government Printing Office, U. S. Department of State

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During my one year as expert/consultant for the Government Printing Office (GPO), my primary assignment has been to work on projects that will provide for permanent public access to electronic Government information products remotely accessible through the Federal Depository Library Program (FDLP). In particular, I am charged with establishing partnerships between GPO and FDLP libraries which will provide for permanent access to collections of electronic Government information products that partners maintain. My work on permanent access through partnerships is a part of GPO's overall effort to implement the Strategic Plan contained in the Study to Identify Measures Necessary for a Successful Transition to a More Electronic FDLP.

The Strategic Plan provides a very concise statement regarding partnering for permanent access:

> GPO, as the administrator of the FDLP, will coordinate a distributed system that provides continuous, permanent public access, involving the publishing agencies, the National Archives and Records Administration, and regional and other depository libraries.[1]

My task has been to provide programmatic detail on how this precise but not overly prescriptive measure will be carried out.

Initial Efforts

In my initial attempts to write something down regarding partnerships, one issue I thought very important was that some sort of agreement or contract would be required to assure that access to products managed by FDLP partner libraries would indeed be permanent and public. With this in mind I began to draft a generic memorandum of understanding (MOU) to outline issues surrounding permanency and access.

I completed the generic MOU and distributed it as a discussion draft on GOVDOC-L just before the fall Depository Library Council (DLC) meeting held in Salt Lake City. At the Council meeting I held a focus session to discuss the various obligations and responsibilities itemized in the MOU which provided some very good insight and clarification. Additionally, Council recommended several revisions to strengthen the draft MOU.

With a revised draft of the MOU done by December, 1996, it was apparent that an initial partnership was needed as a test case. To make my job easier I turned to the existing partnership between University of Illinois-Chicago (UIC) and the Department of State (DOS) on the Department of State Foreign Affairs Network (DOSFAN) Internet site. Aside from bypassing the work that would have been involved in connecting an agency to a library, working with UIC and DOS simplified my

efforts because I have on several occasions worked closely with John Shuler, the government information specialist at UIC, so was working from an existing relationship on that front as well.

Memorandum of Understanding

Although all three partners agreed in principle to the MOU early in the process, it took several months to run through the process of getting approval and signatures from all parties. This was a learning experience for me, and brought home a rule of thumb Jay Young has often told me: the process is often as important as the final product. In GPO this was true, where the process led the MOU through several offices for seemingly endless consideration. But in fact the process made the draft MOU stronger, particularly the refinements to the language in the MOU suggested by the General Counsel's office.

The MOU clearly identifies the information product that is covered by the stipulations of the MOU, which are products that DOS migrates from their current DOSFAN Web site to the DOSFAN Electronic Research Collection which is maintained by UIC in partnership with the FDLP. Beyond identifying the DOSFAN Electronic Research Collection, the MOU outlines the requirements and responsibilities among the partners to assure that the partnership provides permanent public access to the DOSFAN collection. Overall, there are some 32 separate codicils in the MOU which can be collapsed under the following broader topics:

Ownership

The MOU recognizes that the content of the information contained in the DOSFAN Electronic Research Collection is in the public domain, and that a copy of software developed as an integral part of DOSFAN must accompany DOSFAN content if the product is transferred from UIC. It is recognized, however, that UIC does own the intellectual property associated with any value-added software

the university develops for DOSFAN, other than specifically in its application to DOSFAN.

Security

The MOU has many codicils addressing security matters, which focus on such standard issues as providing adequate back-up procedures and fire walls.

Consultation

The MOU provides for consultation among the partners on a number of issues pertaining to the DOSFAN product. Notable is the stipulation that UIC must consult with GPO if UIC plans to significantly alter the way in which DOSFAN is organized or accessed. Consultation is also called for in the identification of resources on DOSFAN which are appropriate for FDLP access.

Access

The MOU requires provision for at least five simultaneous users, and requires that the product be available for Internet access ninety-five percent of the time.

Notification of Partnership

To promote the partnership and to provide appropriate notification that DOS and GPO recognize the UIC site as the official location for the DOSFAN Research Collection, adequate notice of the partnership will be posted to Internet sites operated by each partner.

Locators and Bibliographic Control

Through its Locator Services and GPO Access Monthly Catalog, GPO will provide pointers and bibliographic access to products on both DOSFAN and the DOSFAN Research Collection.

Fail Safe Mechanism

Probably the most important stipulation, the MOU requires UIC to surrender a copy of the DOSFAN Research Collection and any UIC developed software necessary to access the collection in the event UIC can no longer support permanent access. The stipulation recognizes that no institution can realistically agree that they will maintain a product like DOSFAN forever, though the partnership suggests that effort will be made.

Future Partnering Efforts

As I look to the future of partnerships I see the GPO's role as that of broker between prospective FDLP library partners and Federal agencies that view FDLP libraries as a means for providing permanent public access to remotely accessed electronic agency information products. My efforts this year to date have focused on examining the role of FDLP libraries as FDLP partners, and to identify libraries and library consortia interested in participating. Toward this end I have held two focus groups, one each at the fall and spring Depository Library Council meetings, and have identified about ten libraries or library systems and consortia that are interested in signing on as partners.

My problem now is the other side of the brokerage. Initial efforts to identify agencies interested in signing on to partnerships have not been effective. In fact, the overall initial efforts to communicate to agencies GPO's interest in providing permanent access have not had much success. Which means my final two months at GPO will be busy trying to pick up the agency side of this. It is obvious that new tactics must be explored to interest agencies in using the FDLP to provide permanent public access to their information products. My first step in designing new strategies will be to consult with Council members employed by Federal agencies, including Eliot Christian, Phyllis Christenson, and Dan Clemmer.

On a final note, when John Shuler and I spoke last week we realized that now that the MOU was signed we actually have work we need to do to implement the UIC/DOS/GPO partnership. Though I will still be involved, Lee Morey of GPO's Electronic Transition Staff will be working directly with John and with Colleen Hope of the Department of State to fill in the detail to make this first FDLP partnership a success.

1. Study to Identify Measures Necessary for a Successful Transition to a More Electronic Federal Depository Library Program (Washington, DC: Government Printing Office, 1996). p. E-7. http://www.access.gpo.gov/su_docs/dpos/studyhtm.html

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